ComputerWeekly

Thursday, March 11, 1982

Govt ready to approve UK cable network

by David Craver

PLANS for a new national cable network for data, television and other services are being given top priority by the government.

A widely leaked report from the Prime Minister's Information Technology Advisory Panel is urging rapid approval of a network which it says could provide a £3 billion market in equipment and services.

The report, which is to be published on March 22, also calls for a minimum of control over what operators could send over the network. The question of control, rather than the technology, is the key issue in the network, which would be developed by private industry.

Last week Home Secretary William Whitelaw gave the go-ahead for a general purpose communications satellite (see page 3) in what can be seen as the initial stage lo a comprehensive satellite and cable system.

While entertainment programmes will be the first to utilise a cable network, the advisory panel says that eventually a whole range of information services would be offered for both homes and offices.

The advisory panel sees the cable network as a way of stimulating the UK's flagging share of the world information technology market.

It estimates that on current trends the UK's share could drop from 3.8% of the £46 billion world market at present to only 2.4% of a £150 billion market in 1990.

The cable network could also give a boost to the UK's lead in fibre optics. Fibre optics would be used for the trunk routes, and coaxial cables would form the final link from switching stations to some 50 to 100 households at a time.

The Information Technology Advisory Panel was formed last July to give the government an outside viewpoint on its information technology programmes.

Glimpse at the future? . . . Barratts' Information Technology House.

Secrets inside the IT Ideal Home

ONE of the best-kept secrets at this year's Ideal Home Exhibition at Earl's Court is the Information Technology House. The house (a Barratts show home) is visible but no signs outside give a hint of the glimpses it affords of our domestic future with electronics.

It has been nicknamed the Talking House because of the speech synthesiser demonstration attached to the telephone. When you are out you can ring up and ask the computer (a Comart Communicator from NVA) to change the temperature, or the time it will switch on the cooker.

Of course, it doesn't actually work, but doubtless visitors will enjoy listening to a Dalek-like voice over the phone.

Scattered elsewhere around the house are an ICL microcomputer, a fax machine, Prestel sets, and a calculator.

In the bedroom one finds a Sinclair ZX81 micro, for what purpose we can only guess. The kitchen includes a talking coffee pot which tells you the time in French but announces in English "Your tea is ready," irrespective of what drink you are actually making.

IBM lifts leasing worries

by Boris Sedacca

IBM has moved swiftly to allay the fears of European leasing companies which were concerned about the company's recent deal with a finance house to provide leasing arrangements direct to customers.

Under this deal, IBM salesmen would be able to offer customers a lease from Lombard North Central to sell equipment rather than rent.

The leasing companies have long wanted closer ties with IBM, and IBM recently announced a bonanza for them in the form of a volume procurement scheme.

But the leasing companies were worried that Lombard would also be entitled to this scheme and would have an unfair competitive advantage over them.

IBM has now made it clear that this is not be be the case. At a recent meeting of the European Computer Leasing and Trading Association (ECLAT), Gordon Williamson, IBM's new director of industry relations, explained that the Lombard lease would only be offered for purchase-only items at the low end of the market.

Exports get ICL fined

by Andrew Thomas

ICL has been fined $15,000 by the US Department of Commerce for infringements of US export control regulations resulting from the supply of disc drives to the South African police.

Any company re-exporting US products in certain categories is required to obtain a licence to send them to South Africa. ICL gets its disc drives from Control Data.

Colin Moore of the US embassy in London said, "I don't think ICL has been trying to mislead anyone, or the fine would have been up in the hundreds of thousands of dollars."

Post Office computerisation comes to fruition.

PO automation doubt

by David Craver

A TRIAL scheme to automate Post Office counter services will soon be announced by the Department of Industry. But the cost of extending it to the 22,000 sub and crown post offices would probably require more investment than the Post Office could bear.

A working group to study the scheme will be established to draw up specifications for the project, after which firms will be asked to tender to participate in the trial. There are to be four test sites.

The complexity of the project is underlined by the 200 different kinds of transactions that take place at the Post Office counter.

The Post Office acts as an agency for other government departments, including the Department of Health and Social Security, the National Girobank, and the Department of Environment.

A spokesman for the Union of Communication Workers, is not optimistic about the prospects for the DoI scheme.

Automation in one form or another has been bandied about for years, he says, but when the cost is measured against savings the more extravagant visions come down to earth.

NEB subsidiary looks set to lose £10 million

by Kevin Cahill

ANOTHER massive loss is expected at Data Recording Instruments, the print and magnetic media subsidiary of the National Enterprise Board.

Last year (1980) the company turned in losses of £9.5 million on turnover of £28.4 million, and £10 million losses are now likely for 1981. Turnover in 1981 is thought to have risen to £35 million.

Last year, the accounts of the NEB, in which the DRI accounts appear, attributed the losses to the start-up costs of a joint venture with Control Data.

The venture, which is called United Peripherals, is 76% owned by the NEB and 24% by CDC which manages the operation.

By attributing the loss to the start-up, the NEB is in effect saying that the CDC start-up is costing £19.5 million.

According to industry sources DRE, the main trading company in the DRI group, is a profitable company.

With privatisation a major issue at the NEB, soon to become the British Technology Group, rumours are circulating that the DRI operation will be sold off.

THE JAPANESE CONNECTION

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HM6 116LP-3	18k cmos ram 150nS 2716	7.00	6.33	5.50	4.75	3.75
UPD444/8614-1	2114 cmos ram 300nS	2.90	2.30	2.00	1.50	1.19
2114DL-1	1k x 4 static ram 300nS	1.05	0.98	0.86	0.75	pos
4164-20	64k dynamic ram 5v 200nS	5.90	4.83	3.87	3.83	3.45
4164-15	64k dynamic ram 5v 150nS	6.40	5.20	4.50	4.14	3.95
4116R-3	16k 3-rail dyn ram 200nS	1.00	0.95	0.86	0.75	pos
2764	64k by aprom 450nS	18.00	13.33	11.43	10.00	8.34
2532/2732	32k by aprom 450nS	4.20	3.86	3.30	3.50	pos
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EEC calls for wider law on data privacy

by Kevan Pearson

THE UK government's forthcoming legislation on data protection could be pre-empted by the European Commission if the European Parliament has its way.

The Parliament last week passed a resolution calling for the EEC to issue a wide-ranging directive covering data protection and the rights of the individual to be implemented in member States by the end of 1982. But Prime Minister Margaret Thatcher said in February that the UK's legislation would not be introduced until the next session of Parliament, that is between October 1982 and June 1983.

The EEC resolution calls for legislation which goes much further than the British government is planning. Specifically the resolution demands that all databanks containing information on private individuals, whether public or private, should be subject to authorisation and registration; that all individuals should have a right to know what information about them is being held and where; and have a right to correct wrong or misleading entries and be entitled to damages resulting from the use of such information. It also calls for the establishment of an EEC regulatory body, in additon to national organisations.

The resolution demands that member States of the EEC should sign and ratify the Council of Europe Convention on data protection by the end of 1982. So far only seven out of the 10 have signed, including the UK.

There is a potential conflict between the convention and the demands of the European Parliament in that the convention would exempt national security systems, like those maintained by MI5 and MI6 from legislation. Although the resolution does not mention this type of system specifically it is implicit in the wording that all systems, both private and government, should be included.

The British government's policy, as outlined by Timothy Raison, the Home Office Minister, earlier this year, is known to prefer that security and police systems be exempt from registration and excluded from any right of access by individuals.

The government is currently drafting a White Paper on privacy. No date for publication has been set, but it is unlikely to appear before April, which makes legislation in this session of Parliament unlikely.

The government would then have to act very early in the next session, if it is to comply with the recommendations of the European Parliament.

The Parliament is also concerned that privacy legislation enacted in member countries should be broadly in agreement, otherwise the transmission of data across national boundaries could be affected.

BROWNLEE "One of the largest contracts ever won anywhere".

Altergo sells code rights to Hungary

by Boris Sedacca and Andrew Thomas

A LEADING UK software house has gained a foothold into the East European market by signing away the copyright to some of its products to the Hungarian government.

Altergo Software, suppliers of the successful Shadow II teleprocessing monitor software, won the contract after fierce competition against other TP suppliers from Europe and the US.

The order is for eight systems software products, including Shadow II, which have an individual market value totalling £4 million. Altergo would not state the actual value of the order, but Elizabeth Skerrett-Smith, marketing manager, explained that the Hungarian government was given a volume purchasing discount over five years.

Altergo has released the complete products including source code to Szamalk, the technical institute which will act as a central distribution point for software and first line support in Hungary, for use on Soviet-made Riad mainframes (IBM 360 look-alikes) and IBM mainframes.

Skerrett-Smith estimated that the software would be copied to run on about 100 machines throughout Hungary.

"What we are ultimately hoping to achieve is to use Hungary as a 'reference site' for our thrust into markets in the rest of Eastern Europe."

This is one of the largest contracts for software only ever made with East Europe, although similar deals have been struck on the back of hardware sales. "It must represent one of the largest ever won anywhere by a software company," said David Brownlee, of Altergo Software.

A spokesman for one UK software house said this week that doing business with East Europe was risky. It has been known for software to be stolen, given a token facelift, and remarketed to the West under a different name at a cut price, he said.

NEWS BRIEF

Resilience for DEC kit

RESILIENT systems based on DEC kit are to be offered by disc and tape drive manufacturer Systems Industries. The company this week launched what it calls "full survivable" systems based on DEC PDP-11/70 and VAX 11/780 hardware, with an indication of extension to the low-end VAX machines due soon from DEC.

Software is being adopted by Systems Industries from some of its existing users.

£100,000 backing

UK-DESIGNED software, which is used in the American Polaris submarines to help para-medical staff diagnose any causes of chest and stomach pains amongst the crew, is to be backed by £100,000 of government funds. The money from the Department of Health and Social Security will enable the Leeds University-originated programmes to go into full field trials in 10 hospitals in the Leeds area. Full story page 33.

United listing?

ENTHUSIASM for the Stock Exchange is returning to the computer industry with United Leasing, the IBM leasing company which is set to declare improved results, considering a launch on the Unlisted Securities Market later this year.

● Leasing going strong – p. 6.

Acorn accused

ACORN Computer is latest micro manufacturer to be hauled before the Advertising Standards Authority allegedly for making unsubstantiable claims. The ASA last week upheld a complaint that a Press advertisement was misleading on four counts out of five concerning the availability of software and other supplies for the Acorn Atom.

£130m for high technology

by David Craver

THE switch in government support from the lame-duck heavy engineering industries to high technology was given a £130 million boost in the Budget last week. But there is still no indication that the government is about to fund a massive "fifth generation" development programme on the Japanese style.

Announcing the £130 million "innovation package" in the Commons, the Chancellor said that traditional manufacturing must take a back seat to service-oriented investment in new technology. Hitherto, the bulk of the Department of Industry's spending has gone into old industries.

In outlining the details of the new investment programme, Industry Secretary Patrick Jenkin emphasised that the government is now on a new tack.

The shift was detailed in the White Paper on Public Expenditure released alongside the Budget.

JENKIN . . . Govt on a new tack.

It shows that the proportion of the DoI's budget to be spent on scientific and technological research and development will increase from 10% in 1981/82 to nearly 32% in 1984/85. Spending in areas like shipbuilding, steel and vehicles is to drop from a 1981/82 level of almost exactly 50% of the DoI's budget, to nil in 1984/85.

The latest £130 package breaks down into expenditure of £100 million over three years for information technology schemes, improvements in production techniques and space technology, and £30 million to extend tax allowances to encourage retailers to stock more teletext sets.

● Full details page 4.
● Time pressure for tax changes, page 2.

Vast store invention lacks cash

by Kevin Cahill

DEVICES which are claimed to be able to store up to four times the data held on the largest disc drive yet produced have been developed by a British entrepreneur. But now he is complaining that with £300,000 of orders and hundreds of enquiries he cannot find financial backing to get into production.

The devices are the brainchild of tiny Birmingham-based systems builder Micro Zeno and its chairman Bart Khan. They centre on a computer-based coded memory store, called a charge packet device, which will allow a claimed 9.9 gigabytes of non-volatile (ie disc-like) memory in a £12,000 package the size of an 8in cube.

This amount of storage would hold the equivalent of 20,000 full length novels.

Coding techniques, some similar to those used by Khan, are already coming into use to increase the storage capacity of conventional discs.

● The Quiet Genius – p. 31.

INSIDE THIS WEEK'S ISSUE

Jobs: Pages 36/55

Three more 16-bit micros for UK soon

by Robert Parry

THE ranks of 16-bit microcomputers are soon to be swelled by the arrival in this country of two more US-built machines, and by a UK company's plans to manufacture a third US 16-bit machine under licence here.

All the machines use the Motorola 68000 microprocessor, rapidly gaining ground against its 16-bit rivals, the 8086 from Intel and Zilog's Z-8000, and will run versions of the Unix operating system, looking good as the choice for 16-bit systems.

The imports are the Universe 68 from Boston-based Charles River Data Systems, to be distributed by Data Design Techniques of Borehamwood, Hertfordshire, and Cromemco's D-series, to join the range marketed by Comart.

The British manufacturing plans come from Britannia Computers of Dudley, West Midlands, which is expected to extend its range of business computers by building a US 68000-based Unix machine under licence, to be sold under the Armstrong name. Britannia is a member of the Armstrong group of companies.

The Charles River machine, called a super micro by the company, is built around Motorola's range of Versamodules, and uses the 32-bit Versabus. According to Kieron Kelly, who looks after sales and marketing for Data Design Techniques, this gives it full 32-bit capability, which will be a particular advantage when the advanced chips announced by Motorola last week, come along.

The operating system, Unos, is an extended version of Unix, allowing real time operation for control applications. Pascal, Fortran and C compilers are included in basic configurations, as is a database management system.

Data Design Techniques will initially offer two systems on a four to six week delivery schedule. For about £16,000 there is a system with 256K RAM, a 20 Mbyte Winchester and a floppy drive, while an 80 Mbyte Winchester with a 16 Mbyte removable cartridge back-up should cost about £25,000.

The 68000-based Cromemco machines from Comart will be aimed initially at scientific analysis and modelling applications. The 68000 processor is on a board with a Z80A, the dual processor unit directly replacing the Z80A board in current Cromemco systems and giving operation up to ten times faster.

Software instructions switch control of the bus between the processors as required. This means that standard application software for 8-bit machines can be run. Languages for the 16-bit processor will be introduced as the hardware becomes available in the summer, says Comart's marketing director John Lamb, with Fortran, C and a macro assembler in the first batch.

Pascal, structured Basic and Cobol will follow, he adds.

MILLS . . . ICL has a third of UK laser printer market.

ICL sees double for laser printers

by Andrew Thomas

ICL is looking to double the installed base of its £250,000 laser printers by the end of the next financial year. Since the launch of the LPS14 laser three years ago, the company says it has cornered a third of the UK market for high-performance printers, estimated at 100 machines.

As part of its marketing drive, ICL is introducing new facilities to make the device more attractive to prospective users. The spoolers and schedulers built into the VME 2900 operating system now allow drive tapes for the offline printer to be written directly, rather than relying on free-standing utilities to perform the requisite reformatting.

The older George 3 operating system now also boasts a laser-format spooler.

The end of next month sees the launch of the Image Printing Integration (Impact) software applications system, which allows the user to dispense with the masks previously required to simulate pre-printed stationery.

A new release of the LPS14 operating system firmware, OMS, is scheduled for mid-May, and will provide more user facilities. It will be coupled with a 12% reduction in the basic price of the product, currently £226,000.

Also under development is a system where the founts used by the LPS14 can be modified interactively using a Perq workstation. Brian Mills, laser systems marketing manager, commented, "The ability to manipulate the characters interactively via Perq will remove the need for time-consuming and error-prone hex coding."

Also under investigation at ICL's Letchworth Development Centre, is the use of the LPS14 online to MR29s. Currently the printer is only marketed as an off-line device.

The National Westminster Bank has two LPS14s to augment its IBM 3800 laser printers. The ICL devices will be used to print complete cheque books, a task which Mills says is beyond the capabilities of the IBM machines.

ICL is concentrating its laser marketing efforts in the UK and South Africa. "The LPS14 is a high technology device," says Mills, "requiring skilled support. We want to provide a good service for our users, and if we spread ourselves too thin we could end up like Freddie Laker."

Budget a payroll headache

by Cliff Dilloway

PAYROLL departments are faced with some major headaches following the 1982 Budget changes in personal tax allowances and employers' and employees' national insurance contributions.

It is not that the changes themselves are too dramatic, more that the timescale for the implementation of these changes coincides with that for other changes handled by the payroll and computer departments.

The problem is that changes in personal allowances will have to be computerised before April 16 for salary payments after that date. The problem arises because some notifications of changes from local tax offices will not be available until April 16, leaving very little time to make program changes and to test run the system.

The problem will be exacerbated by the change in national insurance surcharge, from 2.5% down to 1.5% effective from August 2 this year. Users of computerised payrolls will also have to contend with changes in the way PAYE is assessed as outlined in Notes on PAYE for Computer Users series 6, number 11, available from Inland Revenue.

Conflicting technology at Zurich

THE conflict between the two key technologies that will underpin state-of-the-art integrated circuit production for the rest of this decade spilled out on to a European exhibition floor this month.

The show was Semicon Europa '82 and the venue was the Zuspa Convention Centre in Zurich.

Two of the biggest exhibitors, Perkin-Elmer and GCA, are also the two major opponents in the technology conflict. The semiconductor operations division of P-E is committed to projection mask alignment as the optimum photo lithography technology for mass producing the new generation of five-inch wafers.

But GCA thinks its wafer stepping machines offer a better approach. By physically moving or "stepping" the wafer one or a small cluster of dies is aligned under the optics before exposures.

This approach is said to allow for the significant in-plane distortion that can affect a large diameter wafer when it is heated during diffusion.

New contender in battle for big disc market

by Kevan Pearson

THE battle for the large disc market left open by IBM's production problems is hotting up. Last week a new company, Ibis Systems, entered the fray with a disc drive of five-gigabyte capacity, twice that of IBM's 3380.

The Ibis 5000 is the top model in a range of IBM plug-compatible drives which also includes capacities of 1.25 and 2.5 gigabytes. The system uses a thin film medium with conventional Winchester type read/write heads to give a storage density of 15,000 bits per inch and a data rate of 24 megabits a second per channel.

The drives will be marketed initially at OEMs, says John Kjos, sales and marketing vice-president, but an estimated 60,000 unit shortfall in the supply of IBM's 3380 has led the company to enter the end user market too.

Prices are expected to be about 90% of the price of the 3380, which in the US is about $34 per megabyte. First UK deliveries are scheduled for mid-1983.

The company's first major deal is to supply Cray Research, makers of the Cray supercomputer. The company is also talking to Cii-Honeywell Bull and Siemens, the West German electronics combine, which estimates that it could need as many 1,000 five-gigabyte disc drives in 1983. It is also having talks with US plug-compatible manufacturer Amdahl.

Ibis Systems is based in California, where it manufactures. But it is negotiating with ICL and Data Recording Instruments, the NEB's loss-making subsidiary, about setting up a manufacturing operation in the UK.

DRI, which last year lost £10 million, is already involved with Control Data in a joint venture called United Peripherals.

The company's directors are all experienced computer industry people from such firms as Memorex, Burroughs, Storage Technology and Xerox.

Ibis' thin film disc undergoes tests at the company's California plant.

It is entering a very competitive market. Memorex, ranked No 10 in sales terms in the US computer industry, was taken over last year by Burroughs after sustaining heavy losses in the field.

Storage Technology and Control Data, however, the two major contenders in the memory market, are healthy and ready to join the large capacity storage with 3380 competitive products.

IBM drive to convert 303X users to top-of-the-range 3081

by Kevan Pearson

IBM's UK sales force has embarked on a big sales drive to convert its 303X users to the top-of-the-range 3081. It is called the "Ten in Five" programme.

Under this scheme IBM salesmen are telling users that, in line with anticipated growth, they will need to increase their raw processing power by a factor of 10 over the next five years. The power rating of the smallest 3033 is just over three million instructions per second (mips), and the 3081K delivers about 14 mips, so it is clear that IBM is aiming at multiple 3081 installations.

The company is thought to be disappointed with the sales of the 3033, with many former large-scale users refusing to upgrade from the top-line 370 systems. Most of IBM's new business came from the massive success of the 4300 series launched in 1979, more than 1,000 of which are believed to have been installed in UK.

The top end of the market has seen much slower growth, and the company is looking to the 3081 to change this.

The key to this move is to improve IBM's flagging profitability. The company has seen no real growth in profits since 1978, due in part to sluggish growth in the large processor market, and partly to the 4300, which some industry observers feel was underpriced.

IBM sounded the death knell for the 3033 when it cut the price in November 1981 to get users to convert lease deals to outright purchases in order to bring in money. The process will be complete when IBM announces small versions of the 3081.

The dropping of the 3033, combined with the launch of smaller H-series machines, should free many 3033s for the secondhand market at reasonable prices.

The problem for users who already have a 3033 is that this machine does not support Extended Architecture, which is regarded as the native operating system for the H-series. This effectively means that the 3033 is not ideal for developing new systems for the 3081 since the latter machine has better facilities than the 3033.

BT wins its fight for cash

by Donald Kennett

BRITISH Telecom has finally won its battle to raise more investment cash, but its plans are now overshadowed by the prospect of privatisation.

The investment news came last week in two doses, approval of the Buzby Bond scheme in the Budget speech and a White paper allowing investment levels to be raised to £3 billion a year for next three years. This year's investment is running at £1.89 billion.

However, both plans could be upset by a Telecommunications Bill due to be submitted to Parliament in October which could lead to up to 50% of the corporation being offered to private investors.

Under the Buzby bond scheme, BT will be allowed to raise an initial amount of up to £150 million from bonds sold on the open market in the autumn.

The changes represent a major coup for BT chairman Sir George Jefferson who 18 months ago came from British Aerospace to British Telecom (then part of the Post Office) which was required to make payments to the government and was short of investment funds.

Since then he has been able to impress on government the importance to the UK's industrial and commercial future of an excellent telecommunications network and has changed the organisation's policy from providing an equal service to all customers to pushing vigorously into high-value markets.

JEFFERSON. . . . Major coup.

Chancellor Sir Geoffrey Howe said in his Budget speech that the return to investors from the BT bond would be related to profits. The conditions for allowing the bond include keeping tariff increases at least two percentage points below the annual movement in the retail price index.

Real unit costs will have to be decreased by a minimum of 5% this year and by amounts to be agreed in future years. The government will also want to satisfy itself nearer the time of the initial sale in the autumn that the bond represents good value to the government, to British Telecom and to the investor.

The Chancellor said it would be an important experiment in exposing the performance of a nationalised industry to the judgment of the marketplace.

Sir George Jefferson said that a great deal more detailed work was now needed on the terms and timing of the issue.

France drops nationalisation of ITT subsidiaries

by Jack Gee

THE French Government has decided to abandon outright nationalisation of ITT's subsidiaries as too costly, and has opted for acquisition of a 51% controlling stake.

Louis Mexandeau, Minister for Posts, Telecommunications and Telediffusion, announced that ITT's demands for $375 million for the American firm's 17 offshoots in France was excessive.

French taxpayers already have to foot a bill for nationalising nearly 40 industrial and banking groups. Compensation terms still have to be settled to reduce Honeywell's 47% stake in CII-Honeywell Bull to about 19%.

So the solution of a majority stake in ITT rather than outright ownership has won the support of President Mitterrand.

The main ITT firm involved is CGCT, which employs over 7,000 of ITT's French workforce of 9,000. CGCT is threatening to lay off 700 workers unless the French PTT gives it a bigger share of orders for computerised telephone exchanges.

ITT's subsidiary LMT was taken over by Thomson-CSF five years ago. This left ITT with only 16% of French government orders for telephone switching centres.

DoI-backed personal challenges IBM, Sirius

by Robert Parry

A BRITISH-built micro to take on personal computers from IBM and Sirius is due to appear this summer, backed by development funding from the Department of Industry's MAP scheme.

LSI Computers of Woking is building on its 8-bit M-Three computer to develop the M-Four, a 16-bit machine which technical director Mike Blench says will be "very competitive with the 16-bit offerings appearing on the market now."

Like the IBM Personal Computer and the Sirius 1, it will use the Intel 8088 microprocessor and have a minimum of 128K of RAM, going up to 256K, says Blench.

It will have integral floppy and hard discs and offer networking and multi-tasking facilities, though to what extent is not yet fixed, according to Blench.

The 8088 processor was chosen as a fast entry into the 16-bit market and to keep costs down.

MAP scheme grants of £200,000 are backing this development and that of a networking system, the M-Five.

Designer '£20,000 out of pocket'

by Maggie McLoning

CASH FLOW problems at Welsh software house Micromedia have left the designer of its major product disgruntled and a claimed £20,000 out of pocket.

Micromedia employed software author Jerry Thompson and was set up to develop a Basic interpreter which he wrote called BetaBasic. Last summer Thompson invested £15,000 of his own money in a 2½ per cent stake in Micromedia's parent company, Seymour Computers, on the expectation, he says, of tripling his money in a year.

Now he says he is saddled with a second mortgage on his home, and that he has been paid only once since last June. For three months up to September he was in hospital recovering from a heart attack. He has now left the company.

Micromedia is the trading arm of Seymour Computers, which is jointly managed by Kate and Hugh Harrison-Allen. They launched BetaBasic last December as a product which would provide micro to mainframe portability for Basic programs.

At the time of the launch, all rights in it had already been sold for £20,000 to a company called Blockport, formed by accountants Peter Mackeonis and Derek Budge. Thompson and the Harrison-Allens are also on the board. The move was made because Micromedia was already experiencing cash flow difficulties, according to Mackeonis.

Mackeonis and Budge now plan to set up a new company called MetaComCo to sell BetaBasic without any connection with Micromedia. They have invited Thompson to be a consultant. But Hugh Harrison-Allen says Blockport has bought only distribution rights and that Micromedia still owns the copyright.

He refused to comment on the current state of Micromedia, and his wife says that a statement is to be issued through her solicitors.

Meanwhile problems have been experienced by Gwent Area Health Authority, the first user of BetaBasic. It bought the product unfinished to run along with the Trout portable operating system from Toltec, the Cambridge-based software house.

Toltec at first refused to deliver Trout claiming Micromedia had not paid the £1,000 fee. "In the end we supplied it free because Gwent were in such a mess," said Paul Reeve, chairman of Toltec.

A representative of Gwent Area Health Authority refused to comment because "legal action is under consideration."

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Acorn claims lead in local network market

by Donald Kennett

ACORN Computers, maker of the BBC Micro, has now sold 300 of its Econet 350 Kbits/sec local area network — more than any other network manufacturer, claims marketing director Peter O'Keeffe — and is preparing for a major push on all fronts into the networked systems market.

One of its most dramatic plans is to have a 100-Mbits/sec version of the Cambridge Ring (currently being installed in "10-Mbits/sec versions) in sample production in about a year.

Technical director Andy Hopper is talking to chip manufacturers in the US and Japan about integrated circuits for the fast ring and other system designs that have been taken to an advanced stage on Cambridge University Computer Laboratory's computer-aided design systems.

The fast ring will provide capacity for video and high-speed facsimile transmission, or simply a large number of attached devices. But back at the level of more mundane computing, progress with the ULA single-chip Cambridge Ring interface being developed by Ferranti is expected to enable Acorn to put 10 Mbits/sec interfaces on the market at £250 in about three months.

To minimise delays while speed and yield problems are ironed out, Acorn is planning to bring out an interim 5 Mbits/sec version in about one month, also at £250. This compares with a current price for TTL-based versions of £1,000 per interface.

Within the year, the company plans to add a box that will share each ring interface between up to 16 terminals operating at conventional data communications speeds of up to 19.2 Kbits/sec, bringing the cost per terminal down to less than £25. This compares with a current price of £46 per interface on the much slower Econet.

The company has installed the first seven of its Orbis 68000 network resource processors at Cambridge University. These are £3,500 systems based on the 16-bit 8 MHertz Motorola 68000 processor with 500 Kbytes of RAM. They will be used for teaching and research.

One of the applications being developed for the 68000 is a link to an unnamed but supposedly low-cost and popular laser printer. O'Keeffe believes this will open the door to the office automation market.

The 68000 links to the Ring through Acorn's Mace protocol support module. "Nobody else has got anything like Mace," says O'Keeffe. It is based on the eight-bit Motorola 6809 processor with 64 Kbytes of RAM — to enable it to hold a lot of protocol software, entirely removing the communications software overhead from the host processor. It costs £1,000

Howe promises £130 million more for info technology

by David Craver

THE Chancellor made a commitment to increased spending on high technology up to 1985 in his Budget last week. Another £130 million was put towards information technology projects as part of the government's intention to shift resources from old to new industries.

On the day after the Budget speech, Industry Secretary Patrick Jenkin outlined how the money would be spent. The bulk, £55 million, goes under the broad category of information technology. That includes a boost to the scheme which helps develop software products, administered by the National Computing Centre.

It was started in 1972 but has so far had only £5 million committed. The additional funds are to be focused on areas of innovatory product development.

Computers in training, medicine and education were singled out, with confirmation that the Department of Industry will extend the micros in schools scheme to include primary schools and expand the number of IT centres for the unemployed from 30 to 100.

Aid for medicine, which could involve microcomputers for general practice, will involve both the Department of Health and Social Security and professional medical bodies.

The Microprocessor Applications Programme, the training and awareness scheme which started in 1978, will get more money after spending most of its original £55 million.

Additional allocation will go to fibre optics and opto electronics, especially to the latter for promotion of collaborative research among universities, industry and government. Announced in July, 1981, £17 million of its £25 million has already been committed.

In the second major area highlighted by Jenkin — improvement of production techniques — some £30 million will go to support the installation of flexible manufacturing systems, including remote control robots, a new scheme for encouraging small engineering firms to buy new capital equipment and an extension of the manufacturing advisory service which subsidises consultants for engineering companies.

The final £15 million is earmarked for industrial aid to space technology, with emphasis on an expanded national programme.

DoI support for industry

	80/81	81/82	82/83	83/84	84/85
	£1.4bn	2.1bn	1.4bn	1bn	940m
DoI budget					
Support for "lame duck" heavy engineering	£599m	1,043m	606m	60m	—
High technology R and D	£168m	212m	249m	280m	300m

Government support for information technology

Robotics	£10 million over 3 years (1981)
CAD/CAM	£6 million over 3 years (1981)
CADMAT	£9 million over 3 years (1982)
MAP	£55 million over 3 years — now extended (1978)
Micros in schools	£5 million for primary £4 million for secondary (1981)
Software product scheme	£5 million committed (1972)
IT Training Centres	£9 million over next 2 years (1981) — £55 million extra allocation in 1982 Budget
Fibre optics	£25 million over 5 years (1981)
Health	
Microelectronics industry support programme	£55 million over 5 years (1978)
Space technology	£50 million for next two years — £15 million additional in 1982 Budget
IT equipment & systems	£80 million over 4 years (includes some of above — micros in schools, IT Centres, software products)
Capital allowances for purchase of teletext and viewdata televisions	

Note: Figures do not take account of inflation.

SALES BRIEF

Leasco wins £400,000 turnkey deal

LEASCO Software of Maidenhead has won a £400,000 turnkey contract from Dudley, West Midlands, housing department against competition including ICL and CMC. Based on a Systime processor, the system will run rental, allocations and repairs administration and will be linked to a network of 50 VDUs and 11 Olivetti cash receipting systems in five district offices.

Leasco and Dudley will also jointly develop software to interpolate the requirements of two pending pieces of government legislation which may require local authorities to compete with private companies for maintenance work and to handle DHSS payments.

L-Sat go-ahead

GEC-MARCONI has started work on a satellite payload development contract for the European Space Agency's L-Sat programme that will ultimately be worth nearly £20 million to the company. The company will develop the first on-board systems to switch between multiple spot beams. They will handle digital channels with capacities from 64-Kbits/sec to 25-Mbits/sec.

Pet training

LINCOLNSHIRE Education Department has bought 70 Commodore Pet 8000 and 4000 from Currys Micro Systems' Nottingham branch in an order worth £85,000. The systems will be used for vocational training in college business studies, engineering and mathematics departments.

£250,000 order

QUANTUM Computer Systems of Leeds has ordered £250,000 worth of microcomputer modules from Gemini Microcomputers of Amersham to use in its £2,250 64-Kbyte Z80A- and floppy-disc-based system, the Quantum 2000.

Branching out

MOTOR service chain Kwik Fit Euro has placed a £90,000 order with Newbury Laboratories for 250 of its model 8510 112 character per second matrix printers for use with a network of microcomputers in its 209 UK branches. The micros, which are based on 16-bit Motorola 68000 processors with 500-Kbytes of RAM, are made by Transaction Control Industries in the US. They will be polled by a Digital Equipment PDP-11/34 front-ending two ICL ME29s at Kwik Fit's Broxburn, Scotland, headquarters.

Dairy package

DORKING-BASED systems and software house Compsec Accounting Services has won a £50,000 order for its accounting package for processing dairies which runs under Unix-7. The order, which includes three Z8000-based 16-bit Onyx microcomputers, is from the GR Tanner dairy of Sible Hedingham, Essex.

Arbat for Gulf

GULF Oil has installed a £125,000 mini-based system from banking systems house Arbat of London to provide real time information handling and telex-based communications facilities to support foreign exchange and other financial dealing in its 28-company group. The system is based on a Digital Equipment PDP-11/34 running accounting and reporting software that Arbat has modified to Gulf's requirements.

Co-op terminals

CO-OPERATIVE Bank has ordered two Rediffusion R50 clustered terminal systems costing £54,000 for its London clearing house.

Enhanced teletext goes on show

THE fully enhanced version of teletext, planned for public service several years hence was given a restricted showing last week, in a demonstration to the European Broadcasting Union and the Institution of Electrical Engineers.

The enhancements include colour pictures of similar quality to normal television pictures, print-quality character founts and graphics, error-protected telesoftware transmission, groups of linked pages and redefinable matrix character sets.

The ability to implement such enhancements has often been summoned to support the claims of superiority of the French and Canadian teletext and viewdata systems. But UK researchers have clung to their belief that market acceptance should be established with simpler and cheaper systems first, despite their counter-claim to have taken the enhancements to a higher level (to colour photographs) and to have done it in a more economic way.

Telesoftware broadcasts have been used for some time in experiments run by the BBC with Brighton Polytechnic and other schools, but it will begin in earnest later this year when the teletext adapter is available for the BBC Micro from Acorn.

All the enhancements require extra memory capacity, both in the receiver and at the broadcasting end. A full-screen colour picture is sampled at 13.5 MHertz with eight-bit samples and requires 1.2 Mbytes of storage space.

A competitor rushing to post his team's entry before the deadline

Last chance to enter for Computastars '82

by Andrew Thomas

THIS is your last chance to enter for the 1982 Computastars competition. Entries close tomorrow (Friday), but organiser Gordon Cairns will accept applications so postmarked.

The magic 100 teams mark has been passed with the return of teams from Case and Commercial Union, both in the medals in previous contests. The Crawley and Enfield heats are nearly full, but there is still room in the North, at Barnsley.

As usual, there has been a last minute rush to enter, and it is anticipated that the final tally of teams will be well over 100. New contenders for the most silly team name award include the Mafia (Ministry of Agriculture and Fisheries), and from Digital in Leeds, DECadence and DECrepit.

The Scottish Widow's team strongly denies accusations of pretension in its choice of Pegasus as team name. "Its the company logo," said a spokesman.

Once again, computing facilities for the scorers will be provided by Commodore, but the company is not entering a team. Much like my excuse: "I'm writing about it so I can't possibly do any running about."

Organised along similar lines to Computastars is JOGLE 1983, an attempt to raise money for charity by running from John O'Groats to Land's End. Computastars stalwart Kalamazoo is putting up the prize for the winning team.

Details on JOGLE 1983 can be obtained from Richard Jephcott at Kalamazoo Business Systems, Northfield, Birmingham B31 1RW.

COMPUTASTARS ENTRY FORM

We have read and accept the conditions of entry for the Computastars/Computarug 1982 and would like to enter

Main competition .....Men's teams .....Women's teams
Small units .....Men's teams
Veterans .....Men's teams
Computarug .....Men's teams .....Women's teams

Name of team(s) .....
Company .....
Address .....
.....
Name of contact .....
Telephone .....Extension .....
Signature of DP manager or equivalent authority .....
Position held .....

We would like to compete in the following region:
NORTH (BARNSLEY) MIDLANDS (BIRMINGHAM)
LONDON (ENFIELD) SOUTH (CRAWLEY)
please circle appropriate region

Enclosed is £.....to cover the entry fees for the team(s). Cheques should be made payable to Computastars Ltd.
In all matters relating to the rules or conditions of entry, the decision of the organisers is final.
Please send entry form and fees to Computastars, 117b High Street, Croydon CR0 1QG.
Telephone 01-688 6499

COMPUTASTARS
Sponsored by Computer Weekly

Dates and venues: Crawley, Saturday, May 15. Enfield, Sunday, May 23. Barnsley, Sunday, June 13. Birmingham, Saturday, June 26. UK finals: Birmingham, Saturday, July 24.

If you have a query on Computastars, please get in touch with the organiser at 117b High Street, Croydon CR0 1QG. Tel.: 01-688 6499.

Govt says employers must be responsible for DP staff training

by David Craver

THE responsibility for training computer staff was put squarely on the shoulders of employers by the government at a conference last week. But the Manpower Services Commission has confirmed that there will be an "action replay" of its training programme over the next three years, with a commitment to train half the nation's required data processing staff in that period.

Parliamentary Under-secretary for Employment, David Waddington said, "No government can relieve employers of their primary responsibility for training."

At the same time he described the £1 billion New Training Initiative as the most ambitious yet and said there was an "urgent need for flexibility" in training so as not to retard growth "now the upturn is coming".

Waddington was speaking on behalf of the indisposed Employment Secretary Norman Tebbit at a half-day seminar, Training for Profit run by the Computing Services Industry Training Council, Cosit.

A warning for industry to use existing training programmes to prevent them from drying up before an upturn in the economy comes was made by MSC deputy chief executive Peter Haxby.

"We give you half the loaf," said Haxby, "but we don't think we are getting the other half from you."

Haxby said that £21 million had been spent on computer training over the past three years, and there was a commitment to maintain that level of spending over the next three years. That included training 20,000 programmers and analysts, or half the estimated requirement.

Currently 4,000 unemployed are trained primarily as programmers, through Training Opportunities Programmes each year, and 1,500 trainees are provided annually through the Threshold scheme for school-leavers, said Haxby.

The MSC, he said, was a "facilitator, not a provider", and gave people sufficient grounding to save employers the initial training.

Another 2,000 grants to employers, which provide trainees with £60 to £80 a week, have been made since 1979, as well as 250 grants of £45 a week for sandwich courses.

A new MSC initiative is being introduced through Cosit to give, on a pilot basis, 50 company grants of some £2,000 a year for traineeships. The programme, which could begin by this autumn, fits into the government philosophy of more work-based training.

Cosit itself, which administers grants for the MSC, has £70,000 of this year's £100,000 allocation for direct employer grants still available.

WADDINGTON . . . "Urgent need for flexibility."

Satellite has digital bonuses

by Jack Gee

TELECOM-1, the French telecommunications satellite due to be launched next year, will offer users the advantages of all-digital technology.

Publicising the launch, Lionel Fleury, of France Cables Radio, a subsidiary of Compagnies General D'Electricité, announced that Telecom-1 will provide teleconference facilities, high speed remote processing, and a new and simpler single-channel transmission service.

France Cables Radio's executive added: "By avoiding digital-analogue-digital conversions, which we shall continue to encounter for a while on earth networks, Telecom-1 will offer connections to a digital service from start to finish.

"This will make digital channels available to users for carrying data in the form of both words and pictures."

An agreement signed with West Germany's Ministry for Posts and Telecommunications will enable German firms to use part of Telecom-1's capacity within their own country.

Rise in most DP job categories predicted

by David Craver

THE UK computing services industry is twice the size of all previous estimates, according to a survey* by the Training Services Division of the Manpower Services Commission. The survey, which sees an increase in all job categories with the possible exception of senior levels over the next three to five years, was commissioned by the Computing Services Industry Training Council.

The survey shows that 1,150 computing service companies employ some 73,000 in the UK, excluding Northern Ireland. Small independent companies make up 49% of the total, with 50% of the industry's workforce located in London.

IBM leads the list of suppliers specified by the computing services industry, closely followed by Digital Equipment and ICL. The next seven in order of importance are shown as Data General, Honeywell, Burroughs, Systime, Hewlett-Packard, Prime, and Texas Instruments.

Problems with recruitment were experienced by 69% of the firms interviewed, major difficulties being commercial experience. But less than one-fifth of the employers interviewed had a formal training policy.

On-the-job training was the main method of training used, and the report indicates that finding a way of transferring new technological skills is of major importance.

Employment increased an overall 4.5% in the services industry from 1980 to 1981, says the survey, with the largest increases in customer support (10%), applications programmers (7%), and systems analysts (5%).

* A survey of the Training Needs of the Computing Services Industry, Cosit, 5th Floor, Hanover House, 73/74 High Holborn, London WC1V 6LE, £10.

WALTERS . . . "Massive market."

Harris attacks the ICL distributed market

by Kevin Pearson

HARRIS Systems has made a major attack on the ICL distributed processing market. It has launched a range of ICL compatible products to compete with ICL's 7500 series of interactive terminals priced at up to 25% less than their ICL equivalents.

The new products are based around Harris' 9200 interactive terminals, and its 1600 terminal system. The 9210 is aimed at ICL's 7502/10, and can support 32 devices.

It can support two host computers, remote or local.

The 1600 is designed to compete with the larger 7500 systems, and can support 48 terminals and four host computers.

According to the general manager of Harris' international systems division, Frank Walters, there is a massive market for ICL compatible interactive terminals. Walters says that although ICL and IBM are roughly equivalent in the number of mainframe computers in the UK, there are only 25,000 interactive terminals attached to ICL machines while IBM has 120,000.

NEWMAN . . . Challenging the big three in banking.

Challenge to bank system 'big three'

by David Craver

A CHALLENGE to the big three suppliers of international banking systems – BIS, Hoskyns, and Arbat – is being made by Interactive Database Systems, which has sold four of its IBM System 38 banking packages since its release at the end of last year.

But London-based IDS has a long way to go before it cuts into the position of market leader BIS, which has its Midas international banking system installed at 95 banking corporations at 184 locations in 44 countries.

The IDS system, IBIS, was designed with the Italian International bank.

Mike Newman, IDS managing director, estimates there is a target audience of 500 institutions in the City and he believes his system is the only one that fully takes advantage of the real time System 38 capabilities.

Newman, who was a senior analyst with IBM working on the System 38 project before leaving to form IDS, says IBIS is the only international banking system designed specifically for the 38. The others have been adapted from "pseudo batch" System 34 systems.

Describing international bank operations as much more complex than merchant banks, Newman says IBIS takes foreign exchange transactions and currency dealing and immediately updates all files with posting through to the general ledger and update of currency accounts. That means at the end of the day the only jobs that need to be done are backing up files, statements, and interest accrual.

Stanley Smith, director of BIS Software, says he has no doubt that IBIS is an excellent product, but adds that market-leading Midas has proved its worth and reputation in international markets. That, he says, is a process IDS will now have to go through, and it is early days to consider IDS a mainline contender.

Newman is hoping to sell eight to 10 systems by the end of the year, and says that currently IDS is giving demonstrations to three banks a week. Cost of the system is some £68,000 for System 38 hardware and about £100,000 for software.

That, he says, compares with £80,000 to £90,000 for a sufficiently powerful System 34 to do the same job, and software in the order of £100,000 to £200,000.

Business boom for thinned out leasing industry

by Kevan Pearson

BRITAIN'S leasing industry seems to be recovering from the setback last year when OPM, one of the largest independent companies, closed with heavy losses.

The downfall of OPM, and other smaller companies which traded at uneconomic rates, has helped the industry in the long term. Fewer companies are now fighting for business and those that remain do not have to compete against prices that are too low.

Parry Mitchell, of United Leasing, says his company is trading better than ever. "We have done more business since October 1 than we have ever done in a full year. European sales are up to £14 million, with a further £8 million in the US compared to £10 million in 1981 for the whole year."

Geoff Sewell, president of ECLAT and a director of CPS Leasing of Warwick, confirmed that business is picking up following OPM's closure. "It had a bad impact when OPM closed, but things are better for the companies that are left."

New York-based OPM ceased trading in April 1981 with debts totalling $100 million. It was widely predicted that the leasing industry would suffer as a result since OPM's closure followed quickly after the demise of Itel in 1979. However, this appears not to be so, and IBM has given the industry further cause to celebrate.

IBM equipment provides most of the business for the independent leasing companies, and the latest round of price increases is likely to provide a small boost.

IBM increased its own leasing rates by 8% for peripherals and the 4300 series mainframes while purchase prices went up by only 6%. This gives the independent lessors a slight advantage since they have to compete against IBM's lease rates.

MITCHELL . . . UK leasing companies better off since collapse of OPM.

Electronic mail thrust

A $5.7 BILLION market is predicted in the US by 1995 for electronic mail equipment, with over 11 billion messages being transmitted, compared with 930 million in 1980.

According to Predicasts, market researchers, of Cleveland, electronic mail terminals, which represented 40 per cent of total electronic mail equipment sales in 1980, will capture over 75 per cent of the 1995 market, or $4.3 billion. Transmission equipment sales will reach $1.4 billion, says the survey.

Transmission apparatus sales are expected to swing toward less expensive equipment such as multiplexers.

Expert system 'is knowledge free'

by Philip Hunter

THE scope for computers will be broadened in science and engineering if a program just developed by a US laboratory becomes generally available. For use on problems involving general reasoning rather than number crunching, the program works on similar principles to the so-called expert systems generators now available from several companies in the UK.

But it differs from expert systems developed for specific applications like medicine and geology by the absence of a knowledge base from which to draw conclusions.

"AURA is knowledge free," says team leader Larry Wos. "The disadvantage of this is you have to spell out every elementary detail of the subject you want to use it for. But it will then function as an expert system."

The development team from the US Department of Energy's Argonne National Laboratory and Northern Illinois University, has used the program for detecting flaws in complex electronic circuits. According to Wos it can provide mathematical proofs that programs will actually perform.

"But its main strength is its ability to skip irrelevant searches by applying basic logic to knowledge gained from the input description of the problem."

NEWS BRIEF

Comart signs up UK dealer

JK Wakeford Associates of Aylesbury has been appointed as a dealer for Comart, the UK microcomputer manufacturer and distributor. The company will sell North Star and Cromemco systems, in addition to Comart's products.

It will also act directly on Comart's behalf with the public sector, including the Central Computers and Telecommunications Agency, the government's computer advisory board.

Atlantic crossing

US software house Atlantic Management Systems is opening a UK branch to expand its operations in Europe. The company's main products include project planning and control systems, and automated estimating systems for the banking and insurance industries.

Sole distributor

NEWLY formed Micro Memory Systems headed by Alan Wiskin is the sole UK distributor for Rotating Memory Systems range of 5¼-inch Winchester disc drives. The company is based at Newbury, Berkshire.

16-bit agent

BRISTOL-based Wilkes Computing has been appointed as a distributor for a new 16-bit microcomputer based on Intel's 8086 chip. The YD-8110 will sell for just under £4,000 for 128 Kbytes of memory and 8in floppy discs. It supports CP/M 86 and CIS Cobol and will be available in April with a full range of applications packages, the company says.

Service savings

HEMEL, Hempstead-based computer manufacturer CTL has introduced a new low-cost maintenance scheme for its Momentum series of resilient computers. The scheme offers a minimum saving of 25% on the basic service contract and up to 50% on CTL's enhanced service agreement.

Heavy backing

THE 250 Kbit-per-second local area network announced in January by Cambridge-based design consultancy Nine Tiles Information Handling has won the support of heavyweight marketing Hawker Siddeley Dynamics Engineering is to make and market the network called Multilink.

Crime detection

HOME Office scientists, in consultation with the police, have been studying since 1974 the feasibility of using computers to help solve serious crime, Patrick Mayhew, Minister of State, Home Office, has revealed in the Commons.

Agreement

A FIVE-YEAR technical collaboration agreement has been signed by Japanese semiconductor manufacturer Toshiba and Italian SGS-Ates, under which SGS-Ates will immediately get a 3½ micron process, followed next year by a 2½ micron process. SGS-Ates will also gain access at mask level to Toshiba products using these advanced technologies.

Intel database processor for launch this year

by Robert Parry

A BACK-END database management system based on the MRI System 2000 DBMS and Intel's 8086 16-bit microprocessor is currently on test sites in the US and should arrive in Europe later this year.

The database processor, DBP, is designed to run a relational database, retrieving data by seeking a match for a given item rather than by addressing a predetermined location.

It comes between the main computer and offline memory, "like an overboard motor", according to Les Ferrington, Intel's system marketing manager for Northern Europe.

Intel acquired MRI in 1977 and has been working on a database processor for some years. The DBP is built around software developed from the System 2000 hierarchical DBMS and Intel's high-end hardware technology. "Using the 8086, it is targeted to perform equally as well as anything in the marketplace," says Ferrington.

"With the rate of silicon technology advance we will see rapid improvements," he adds. These are likely to include using Intel's more powerful 16-bit processor, the iAPX 286, which is compatible with the 8086 but will run up to six times faster.

Ferrington sees the major competition for Intel's DBP as the Britton-Lee Intelligent Database Machine, launched in the UK last September.

The Britton-Lee IDM weighs in at $40,000 for its smaller version, while the Intel DBP is expected to cost between $10,000 and $15,000 to OEMs, and about $5,000 more for an end user version.

The system will come with a turnkey software package, Ferrington says, with no user interface. It will be able to link with numerous types of mainframe at the front end, with a small amount of personality software needed, and to off-line memory on up to 16 spindles at the back-end.

September debut for Tandy education comms system

by Donald Kennatt

THE education market is a major target for Tandy's Network III communications system which will be launched in the UK in September. The system allows up to 16 Tandy Colour Computers or TRS-80 Model IIIs used as student stations to access a Model II-based teacher station to share disc and printing facilities.

Tandy vice-president for computer marketing John Shirley says that Network III will aid Tandy's penetration of the education market, although it is already the dominant supplier in that market in the US.

Network III polls the attached devices to initiate communication at 9,600 bits per second via an RS232 port. It allows the teacher to monitor a student's performance in tests, offer assistance and download new software automatically. The students can access the shared disc independently, unlike on the older Network I and II systems.

"There will still be a market for Network II," says UK computer merchandising manager Martin Sobell.

Network I and II both use the cassette interface to communicate with the micro and so are not usable on the Model II which is a disc-based machine designed for the business market. Network III may have some applications in the business market, says Sobell, but the main networking product for that market is Arcnet, which has been acquired under an agreement with Datapoint.

Arcnet operates at 20 Mbps and supports up to 256 stations including application and file processors.

When it appears later this year, Arcnet will cost about £250 per station interface, plus £20 per cable and £150 for each junction box or hub around which stations can be clustered.

Network III will cost about £500 for the whole 16-port system with supporting software.

MDS aims to sell electronic mail

by Donald Kennett

MDS hopes to be the next company to market an electronic mail service in the UK. The distributed processing and terminals company has applied to British Telecom for a licence to operate the system, called Winos (Worldwide Integrated Communications System), in partnership with another US company, Wiltek, of Norwalk, Connecticut.

Ray Skinner, managing director of the UK subsidiary of MDS, said that if granted a licence Wiltek would set up a bureau in the UK or elsewhere in Europe. It would offer initially in-house only message switching services aimed at companies with many divisions.

The system is based on a Digital Equipment PDP-11/34 and it polls around the terminals linked to it at predetermined intervals, say once an hour.

The terminals supplied for use with the system are the MDS Series 21 office microcomputer.

The micro costs from £4,500 to £50,000 and can be supplied with hard discs, tapes and printers, as well as word processing software and emulations of most mainframe manufacturers' terminal communication protocols including ICL's 7503.

NEWS BRIEF

Software Triumph

SOFTWARE allowing Triumph Adler's Alphatronic microcomputer to emulate IBM 3780 and 3270 terminals is available from Micmtrend. Minor hardware and software modifications to the standard Alphatronic are needed for the interactive 3270 emulation. Up to seven micros can feed through a single protocol converter.

Xerox distributor

LEEDS-based turnkey system suppliers Megabyte has been appointed an authorised distributor by Rank Xerox. It will handle the Xerox general purpose business microcomputer.

For newsagents

A NEWSAGENTS' computer system based on the Sharp MZ-80K microcomputer is to be distributed in South and West Wales and in Shropshire, Hereford and Worcester and parts of Gloucestershire and Staffordshire by Market Logic, following an agreement with Computer 100. Over 80 of the newsagents' systems have already been installed by Computer 100 dealers.

VERMES . . . Callog expects £2 million turnover in first year.

Phone logging sales boom for UK firm

by Donald Kennett

MORE companies want their telephone bills analysed than the traditional suppliers thought, according to Poole-based manufacturer Callog.

While eight established UK suppliers of microprocessor-based call logging equipment sold only 600 systems in the five years to last July, according to Callog, it has sold 1,600 systems in the last seven months.

The company has done this by stripping down the logging operation to a very simple operation. The customer buys a cassette tape based logging unit capable of monitoring up to 64 extensions for between £1,200 and £1,750. It is installed by British Telecom or Telephone Rentals for about £700. Tapes are sent monthly to Callog's bureau which prints details of the calls made from each extension and totals for local, long distance, peak time and cheap time. The bureau charge is £360 a year.

Rival systems contain their own printing facilities, but they cost from £5,000 to £20,000 and often need a specially trained operator to be responsible for them, Callog says.

Callog's approach brings the service within the range of solicitors and accountants.

Managing director Andrew Vermes said: "Until now the business telephone bill has often been the largest single overhead item on which management has had no detailed information and thus little or no control."

Offering this control should bring Callog a turnover of £2 million in its first year of trading. In its second, it expects a turnover of £10 million with profits of £1 million.

US trials for French system

by Jack Gee

THE US BANK which opted for France's Teletel interactive videotex last year, is to conduct trials with Telepaiement, a French computer-based payment system, the French Telecommunications Authority has announced.

First Bank System of Minneapolis is to equip about a dozen Minnesota farms this summer with Telepaiement memory card scanners.

The announcement follows the linking of the French Post Office's own bank network to the 2,200 domestic terminals installed in the Velizy area, near Paris.

NORMAN . . . Expects to sell over 500 units by end of 1982.

UK manufacturer adds to terminal range

by Kevan Pearson

TERMINAL manufacturer Direct (UK) has added another Digital Equipment compatible terminal to its range of DEC and Hewlett Packard emulation terminals.

The VP800/B emulates DEC's VT100, and meets Ansi standards, the company states. It has 80 or 132 column display, three speed bi-directional scrolling and 32 Kbytes of memory for program development. The keyboard controls all terminal functions and there are eight programmable function keys each capable of storing 256 Kbytes.

List price for the VP800 is just over £1,200 and it comes at the bottom of the Direct range.

Dr Stephen Norman, Direct (UK) managing director, says the machine has proved popular in the US, particularly among programmers. The company has sold 40 units in the UK and expects to sell over 500 units this year.

Altergo sets up Saudi link

by Andrew Thomas

FOLLOWING a £2 million deal with Saudi airlines last year, systems house Altergo is consolidating its Middle East presence with the formation of a new company, Altergo (Saudi Arabia), in conjunction with agents Khalid Balghunaim.

Altergo chairman Raj Thomas says: "The new company underlines our commitment to the Middle East market. We have operated a joint company along similar lines in Kuwait for the last 18 months successfully, and we believe that the time is now right to expand."

SOFTWARE FILE

by Maggie McLening

TOM to help fill the Wang software gap

BING . . . expanding Wang market with converted software.

THIS year seems set for a boom in software for Wang VS mainframes, of which there has been a severe shortage until now. Many VS users bought the machines because of Wang's high reputation for technical expertise and reliability, then were let down by the absence of data management software when ADMS was withdrawn.

In an attempt to bridge the gap Wang has already offered its users Cincom's Total, which is scheduled for release in the US on April 1 and should be available in the UK in July.

Wang is also relying on software houses, particularly The Office Manager (TOM), which announced the Speed II utility for system development and file management, and which will be releasing a wide range of application software in June. TOM has over 5,000 installations world-wide.

"One of the major problems in marrying hardware companies to software companies is that the hardware companies do not recognise the value of a product," commented Howard Bing, president of TOM.

He added, "First time users need to be educated – too many people are buying a box, then looking for software. This is the industry's fault, because the dollars are all on the hardware side."

TOM's policy is to develop a software package, then appoint approved distributors in strategic areas who will then be responsible for customising it for the particular needs of that country.

It is then up to the distributor to appoint sub-agents to sell the package to specialist markets. Consultation between distributors is allowed, but TOM does not permit transfer of amended software.

"We don't have the staff or the information to be able to make the changes ourselves, and we've had considerable problems in the US with companies changing software and then passing it on without support," explained David Cotlove, designer of Speed and vice-president of operations for TOM.

The introduction of Speed II for the VS machines should in turn trigger off more application software, as it is designed to get systems running in a fraction of the time taken by normal programming methods, and also allows easy alteration of the programs without recompilation.

"I think companies will have to have products like this in the future because otherwise they have no possibility of satisfying their users. DP departments cannot keep up," commented Cotlove.

"It's definitely an applications market now and will be for several years," agreed Bing. "We're after it and this utility is our vehicle."

Plans are also afoot to convert Distributor II, the fully integrated distributor business management system developed by TOM for the Wang 2200 small business minicomputer. This system offers stock control and warehouse management combined with full financial accounting facilities and customer services.

PME, UK distributor of TOM software, is enthusiastic about the conversion. "Distributor II is the best set of packages anywhere on the market because of the integration between the programs themselves and with word processing. This should make the Wang VS machine the most sought-after machine in this price range," commented Michael Powell, joint managing director of PME.

There should also be an important advance in Wang's own software before the end of the year, according to Keo Olisa, UK marketing director of Wang.

COTLOVE . . . "DP departments cannot keep up."

"Test site for Wanget should be installed in April, with the software becoming generally available in about September," he said.

Wanget software is designed to link Wang hardware to that of other manufacturers, so it should open the door to much wider networking possibilities, and enable users to build up their computer environment as they need it, without needing to migrate to bigger machines.

Philips development system to run Unix

THE trend towards powerful software tools for microprocessor system development continues with Philips' planned Juoo launch of an enhanced version of its development system running uoder Unix.

Tektronix and Zilog already offer development systems with operating systems derived from Unix.

Philips' now system, based on its PMDS, will have more mass storage and multi-user operation, supporting up to 8even simultaneous users.

Like the current model it will have full emulation facilities for a variety of microprocessors, with simultaneous emulation for four processors.

Cathay Pacific is the first airline to adopt HOST's service.

Bureau service for airline accounts

by Philip Hunter

MAJOR airlines are closer to having a computer system which links accounting and reservations following the development of a bureau service for use in airline booking offices.

The London office of Cathay Pacific Airways is the first to take on the bureau service, which was developed by HOST, Hooper Systems and Technology, and runs on a Prime computer for an annual charge of about £12,000.

The guts of the system come from a business package with stock control and sales invoicing developed by HOST's Commercial Systems Division (CSD). Cathay will use it for daily passenger sales analyses and invoicing of credit sales. Later it plans to automate ticket stock control.

At present the major airlines have large ticket accounting and reservation systems installed at their head offices, but lack adequate data processing facilities at subsidiary offices, with the result that there is still much tedious manual work.

Systems that link the offices directly with the central DP departments are being developed, but are still a long way off, according to Stan Packham, who is managing director of HOST's CSD.

"There are compatibility problems to be solved for that to be achieved," he says, adding that Host's solution provides an ideal stop-gap.

HOST has an Airline Division which supplies software systems for head offices of medium and large airlines. Packham explains that CSD developed this bureau service because most of the software was already available from them and merely needed adapting.

"The Airline Division concentrates on large-scale IBM-based reservation systems costing more than £100,000," he says.

HOST expects another major airline to sign a contract for the bureau service later this month.

Pascal author's language for Apple

A COMMERCIAL implementation for the Apple of Modula-2, the high-level language designed by the creator of Pascal, Niklaus Wirth, has been announced.

It has been developed by a systems software company called Volition Systems in California, which has brought out a compiler running under the UCSD Pascal system.

In contrast to Pascal, Modula-2 does not require non-standard extensions to handle tasks like real time programming problems, as it is a small language supplemented by library modules. Features include modules, processes, separate compilation, dynamic array parameters and low-level machine access.

"Very large programs are easier to construct in Modula-2 than in Pascal because the pieces are even more manageable," commented Joel McCormack, chairman of Volition Systems.

Details of the Modula II implementation have not yet been sent to Microsense, Apple distributor in the UK, but Stephen Brewer the marketing director said that he would be interested to know more.

"There is a limit to the number of new languages that can be put into the marketplace," he commented, "but I'm sure if it was designed by Wirth it has to be good."

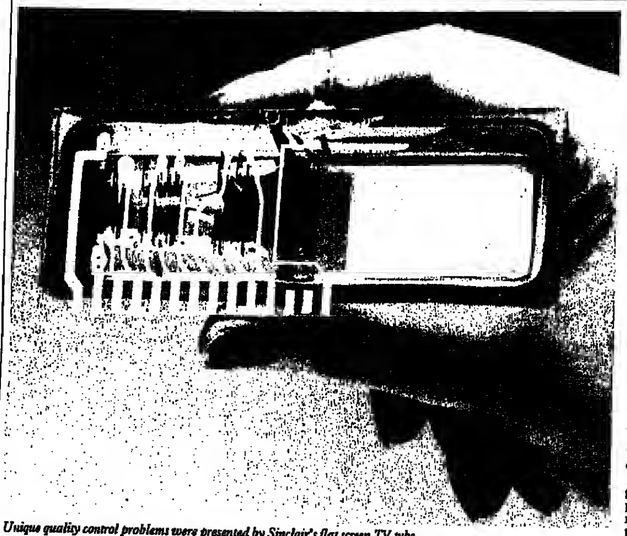
Rockwell CMOS chips soon

ROCKWELL has completed masks for its first chips based on low power, high density CMOS technology, and is beginning wafer processing for engineering evaluations.

Sample quantities of CMOS versions of the 6502 microprocessor and the 6520 peripheral interface adapter are scheduled for the second half of the year, with other devices in the 6500 family, including memories, peripherals and single chip micros, to follow.

Three new single chip microcomputers, fabricated in NMOS, have also been introduced. These are based on an enhanced 6502, which adds four instructions handling single bit setting and resetting, and branching on bit set or reset to the standard 56 instruction set.

The new models, 6500/11, /12 and /13, include up to 3K of ROM, 192 bytes of RAM, I/O channels, a serial communications channel, 16 or 64 Kbyte expansion bus I/O modes, and six external and four internal interrupts.



Unique quality control problems were presented by Sinclair's flat screen TV tube.

by Robert Parry

Consultancy to test Sinclair TV

QUALITY control for Sinclair Research's forthcoming flat screen television tube is proving good business for design consultancy AIM Cambridge.

The company, based in St Ives near Cambridge, has nearly completed work on a £100,000 microprocessor-controlled automatic test system for the Timex factory in Dundee where the miniature tubes will be manufactured.

When installed, their ATE system will be able to test three tubes in parallel every ten seconds, with a provision to upgrade to six parallel test modules.

The TV tubes will first be used in Sinclair's flat screen Microvision, due to be launched in the middle of the year. They are also at the centre of a deal with ICL for the development of an integrated digital telephone workstation.

According to AIM's electronics group director David Aspinall, the project started as a feasibility study nine months ago to see if testing the tubes rapidly and in quantity was possible.

By the end of this month the system should be ready to go into Timex's factory, five months from the go-ahead after the preliminary study.

Test modules are each controlled by a Z80 board from Quarndon containing seven to eight Kbytes of memory as well as the processor. The modules perform a variety of tests on the tubes, ranging from crude electrical measurements like checking for short circuits, through more difficult things like measuring the very low electrode leakage currents, to optical measurements to check on spot size, resolution and focus.

Each tube tested is given a pass or fail serial number and all test results stored, first on a fourth Z80 board controlling the whole system which can store about ten minutes worth of data.

This is then transferred, via an information bus, to the main factory information system database. There is also, for the seeing-is-believing lobby, a final visual check – extra quality assurance, in AIM's view.

Add-on board boosts Alphatronic to 64K

RESPONDING to pressure from its software dealers, Triumph Adler UK has developed an add-on memory board to upgrade the Alphatronic microcomputer to 64K.

The UK company is ahead of its German parent in this, delivering 64K versions since last month for £2,295 compared with the £2,095 for the standard 48K model. It is also now offering the boards to end users as a field upgrade, for £300.

Adler in Germany is also working on a 64K version, but according to Sid Larholt, Adler's UK R&D manager, this is not yet available nor will it be an upgrade. Triumph Adler in France has already taken units, as has a German dealer.

The UK development uses CMOS static RAMs, unlike the German one which will stick with dynamic RAMs – and consequent refresh problems. "We had looked at static," says Larholt, "but were put off by power requirements, and we didn't want to mess around with the power supply. Then we found the 16K CMOS static RAMs from Hitachi."

The upgrade comes after a period of consolidation of the dealer network in this country, according to marketing manager Jack Leatherbarrow. There are now over 150 served by seven regional distributors and four local Triumph Adler offices.

The number of dealers is still growing, but Leatherbarrow expects it to level out at about 200.

Most are software houses, systems dealers or office products suppliers, with a few computer shops. "It is very important for end users to feel secure," says Leatherbarrow, and he feels the structure allows this.

The analogy with cars has nothing to do with the fact that Triumph Adler is owned by Volkswagen, he hastens to add.

End user security is also helped by Adler's service support. Most of Larholt's activity is in testing out products for the Alphatronic from outside sources to see if Adler can approve them.

Once products are approved – hardware add-ons or software packages – all dealers are informed of their availability and capability.

Latest in Altos range arrives in the UK

THE first of the extensions to the range of microcomputers from California-based Altos Computer Systems revealed last October are starting to arrive in this country.

According to Jim Laflin, sales manager of Eton-based distributor Microtex, there are 196 of the new Series 5 8-bit machines labelled "Europe" about to be shipped from the US, and the 16-bit ACS8600 systems should start to come through this month.

The series 5, known as the Little Box, is a compact system based around the Z80A microprocessor, like earlier Altos products. It offers either 5¼-inch floppy or hard disc drives.

Both models have 192 Kbytes of RAM, using 64K chips, and support up to four users. The RAM is partitioned into separate user blocks and a common block, all of variable size. Operating systems supported are CP/M, MP/M II and Oasis.

The five Mbyte 5¼-inch Winchester system uses a Seagate drive and, says Laflin, supports three terminals.

It is portable, he claims, as long as you leave the terminals behind.

"I'm looking forward to going into an office with a three-user system under my arm," he comments.

His target price for the Little Box is £5,200 which, when terminals, printer and software are added in, gives a price of about £10,000 for the three user system.

"This is very much the market we're aiming at," says Laflin, though he remains to be convinced that the compact Series 5 will detract appreciably from the current eight-inch Winchester products coming in at about £1,000 more for a similar system with greater mass storage.

With the Little Box and the 16-bit machine, Laflin expects to double sales, aiming to shift 500 units this year. The interest shown in the 8086-based ACS8600 system, as yet undelivered, and the facilities it will offer – eight users, the Xenix version of the Unix operating system as well as CP/M-86, MP/M-86 and Oasis-86 – has been immense, he says.

by Kevin Cahill

Bollen (right) gives Dr Annur bin Hj Abdul Latif, training director of the Malaysian government's training, a tour of Computeach's London centre.

Computeach heads for £2m turnover

COMPUTEACH, one of the leading suppliers of computer training expertise in the UK and abroad, is expecting a 40% increase in turnover to close on £2 million, compared with last year's £1.4 million.

Computeach, which is the minority partner in a Malaysian joint venture, is one of the few organisations retaining business links with that country, following a recent freeze in commercial relations between the UK and Malaysia.

The Malaysian government, in the wake of what it alleges was discrimination by the authorities in London, has insisted that all business with the UK is now passed through the Prime Minister's office.

Managing director Terry Bollen says that with its partnership policy, Computeach has experienced no difficulties.

The company would soon find out if it had met with the government's disapproval, he adds, as most training contracts run for less than 18 weeks, and have continued to be renewed.

According to Bollen, Computeach's partnerships have given it major operations with companies in Singapore and Scandinavia. Its associate in Ireland is possibly one of the most successful. He adds that perhaps the recognition on Computeach's part that the days of commercial imperialism, like the days of military imperialism, are now long gone, helps in its growing spread of foreign contacts.

More funds on the way soon for DP company start-ups

THE volume of funds reaching small UK computing companies is set to rise dramatically as several of the trusts established last year prepare to make their first investments.

John Robertshaw, of United Computer and Technology Holdings, which was set up with just over £2 million of funds raised by a public issue of shares, says that he expects to announce shortly the first four or five UK companies in which UCAT will be investing.

Already the company has made a series of general technology investments which have proved lucrative.

After raising the funds, which are ultimately scheduled for venture capital style investment, Robertshaw and his board looked around for the best place to "keep" the money while the evaluation process was going on.

Among the choices they made were ICL, Kode and Case.

Although exact details of the UCAT boldings in those three companies are confidential, Robertshaw acknowledged that each had proved a good buy with the value of the stock held rising in each of the companies.

In the case of ICL, in which UCAT holds 100,000 shares, a purchase price of 35p prior to the rights issue would have yielded a gross return of £30,000 or more.

Apart from the eventual importance of the UCAT funds to the small computer companies which will be receiving them, it is also important for the board of UCAT to be able to show the investors who put up the company's £2 million that computer companies are good investments.

UCAT has made a series of venture capital style investments in American computer companies and there are a number of reasons for starting in America according to Robertshaw.

The board of UCAT has an American chairman and one other American member and Robertshaw points out that the computer and other high technology industries are international, with most of their origins in America.

The bulk of venture capital experience and expertise is also US-based.

The programme adopted by Robertshaw and his fellow directors, who include Brian Mills the ex-chairman of BOC Datasolve and Philip Rule, chairman of Safe Computing, appears to be one of making a limited series of careful investments in American companies, then learning from that experience.

In this they are materially helped by the way US companies organise information for investors.

The young US firms seeking finance prepare a prospectus in which no punches are pulled about the risks involved. One such company in which UCAT has recently taken a stake is Computer Memories Inc, CMI of Chatsworth, California.

The company manufactures 5¼-inch Winchester discs for the OEM market and was set up last June.

Since start-up CMI has shipped just over 1,000 disc units to 92 different customers – which sounds just the sort of volumes a small UK company might make much of in seeking finance.

Instead CMI, in a section of the document sent to potential investors lays out in a blunt fashion the risks faced.

According to CMI the company had made and shipped 1,023 units by December 31, 1981, but none of these had gone to a major OEM for any purpose other than evaluation.

The report then says that even if the company's disc drives are favourably evaluated there can be no assurance that major OEMs will be willing to rely on the company as a supplier in view of the company's small size, limited production capability and short operating history.

And CMI is asking investors to put up $4.2 million (about £2.5 million).

UCAT has also invested in Security Tag Systems Inc of Florida. This company makes computer-based equipment to prevent shoplifting and theft of small articles like books from libraries.

Finally UCAT has also recently made an investment in Codata, the San Francisco manufacturer of desk-top micros based on Intel's multibus architecture.

ROBERTSHAW . . . Boosting investments in UK computer companies.

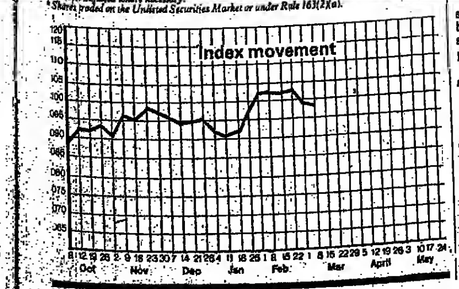
CW SHARES TABLE

Date 16/3/82 Index: 87.38 Change -1.11

Pence	London Stock Exchange		Pence		£	US Stock	£	
1982	Stock		Price	Chge	1982 High	Low	Stock	Price	Chge
High	Low								
161	141	ACT (Apn Comp) (25p)	178		2054	1810	Apple Inc	1810	+ 110
190	160	BOC Int (25p)	184	+ 1	2054	2146	Auto Data Pro	2146	+ 146
20	20	Bell Bory Kem (25p)	20	+ 1	2054	2146	Bermuda	2146	+ 146
101	101	Chubb (100)	114		2054	2146	Commodore	2146	+ 146
88	88	Cray Electron (25p)	87	+ 2	2054	2146	Comshare	2146	+ 146
88	88	CA Sc R (100)	238		2054	2146	Comp Sciences	2146	+ 146
88	88	De La Rue (25p)	268	+ 5	2054	2146	Computone	2146	+ 146
88	88	Ectel (25p)	268		2054	2146	Control Data	2146	+ 146
88	88	Ferranti (50p)	268		2054	2146	Dataproducts	2146	+ 146
88	88	GEC (50p)	815	+ 1	2054	2146	Data General	2146	+ 146
88	88	ICL (50p)	88		2054	2146	Datapoint	2146	+ 146
88	88	Kalamazoo (10p)	88	+ 2	2054	2146	Datapro Rsch	2146	+ 146
88	88	Kode Int (25p)	88		2054	2146	Digital Equip	2146	+ 146
88	88	Memec (10p)	88	+ 1	2054	2146	Elec Data Sys	2146	+ 146
88	88	Micro Focus (50p)	88		2054	2146	Gen Automation	2146	+ 146
88	88	Norcros (25p)	88		2054	2146	Honeywell	2146	+ 146
88	88	Racal (£1) (50.5B)	88		2054	2146	Hewlett-Packard	2146	+ 146
88	88	Smith Dave	88		2054	2146	Honeywell	2146	+ 146
88	88	Sperry & Hunt (25p)	88		2054	2146	IBM	2146	+ 146
88	88	Philips Lamp (10p)	88		2054	2146	Intel	2146	+ 146
88	88	Plessey (50p)	88		2054	2146	Linear Inc	2146	+ 146
88	88	Quest Auto (10p)	88		2054	2146	MAI (Mohawk D)	2146	+ 146
88	88	Reed Exec (25p)	88		2054	2146	MDA (Morgan Ed)	2146	+ 146
88	88	Redifusion (25p)	88		2054	2146	Motorola	2146	+ 146
88	88	Thorn (50p)	88		2054	2146	Modular	2146	+ 146
88	88	UCA (50p)	88		2054	2146	Motorola	2146	+ 146
		OTHER MARKETS*			2054	2146	National Semi	2146	+ 146
					2054	2146	NCR	2146	+ 146
					2054	2146	Perkin-Elmer	2146	+ 146
88	88	Bos Comp (10p)	88		2054	2146	Prime	2146	+ 146
88	88	Comp Servs (£1)	88		2054	2146	Raytheon	2146	+ 146
88	88	Comput (CAP) (10p)	88		2054	2146	Rental	2146	+ 146
88	88	NWW (£1)	88		2054	2146	Sperry Comp	2146	+ 146
88	88	Rolls & Nolan (10p)	88		2054	2146	Storage Tech	2146	+ 146
88	88	Scancicta (10p)	88		2054	2146	Tandy	2146	+ 146
88	88	Star Comp (10p)	88		2054	2146	Tandon	2146	+ 146
88	88	Trident Comp (10p)	88		2054	2146	Texas Inst	2146	+ 146
88	88	Triplex (50p)	88		2054	2146	Tymshare	2146	+ 146
		US Stocks			2054	2146	Wang Lab A	2146	+ 146
					2054	2146	Wang B	2146	+ 146
2818	22	Amdahl	22	– 3					

Table shows the closing prices of The London Stock Exchange on Friday and in America on Thursday. The share index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.

** Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



Budget gains for BT while the banks lose

NOW that a modicum of time has passed since the Chancellor of the Exchequer finished surrounding the nation's accounts with a smokescreen of words like Public Sector Borrowing Requirement, it is opportune to look and see what he has done for the computer industry.

Firstly, he probably hurt it indirectly by attempting to curb the tax allowances the banks were claiming on equipment sold and leased abroad.

Overall, about £530 million a year was involved, of which maybe £25 million was computer industry product.

On the other hand, by allowing British Telecom to go to the private sector for the £150 million it will be seeking in the autumn, he will have opened new avenues of finance to BT and increased the City's awareness of the advantages of investment in the computer and telecommunications sector (with any luck).

Many small communications and software company start-ups will benefit substantially from the small business reliefs which were proposed in the Budget speech.

Two major financial trusts which set up their schemes under the £10,000 tax reclaims on business start-ups are about to begin making their first investments, and the raising of the limit on one individual's investment in any one year to £20,000 will help.

Administrative costs will be lowered and investment packages in specific companies will be easier to manage.

Many companies in the computer industry have taken advantage of the government's guarantee scheme, which gives the banks insurance against losses on 80% of any investment in a small company up to £75,000.

Already the allocation of funds for this year under the scheme has been raised to £150 million from an initial £50 million. The Chancellor has now proposed that the 1983 limit should be £150 million.

The government is to provide new assistance for the space industry and will provide more assistance for companies which are involved in automation.

Some, at least, of this should work its way back to software and computer companies involved in robotics and factory system software.

Sale of Insac is completed

PRIVATISATION at the NEB, soon to be the British Technology Group, continues apace with the completion of the sale to Britton-Lee of the remains of Insac.

Britton-Lee, which manufactures the IDM series of database machines, has raised much of its working capital in the UK and is also has a number of UK directors and has eventual plans to start a manufacturing operation in UK.

Insac, which was set up with much hoo-ha and a good deal of public money several years ago to market UK software products in the US and overseas, will now operate as an independent software house based in Atlanta, Georgia.

The company will continue to have sales outlets in six US cities.

LEGAL OPINION

A good name is valuable—protect it with care

Bryan Niblett is a barrister and computer scientist specialising in the legal problems associated with computers.

ONE of the most useful aids in marketing a computer program is a well-chosen name. A memorable and distinctive name can be much more than a helpful caption, it can identify the program with a particular trader and assure a purchaser or licensee that he is getting the quality of program he expects.

For this reason a name can acquire immense commercial value and a trader naturally wishes to protect the goodwill associated with it.

The most effective method of protecting a name attached to a computer program is to register it as a trade mark. This gives the mark statutory recognition as assignable and transmissible property.

As a form of industrial property trade marks have one significant advantage over patents and copyrights: they can last for ever. As long as the mark is used, and the owner is vigilant to see that it does not become common to the trade, and as long as the renewal fees are regularly paid, then the term of the mark can be without limit.

For example, the famous triangle mark used with Bass's pale ale, which is No 1 on the trade mark register, has been used since 1876 when the register was first established.

The value of trade marks attached to computer programs has become recognised by the industry and registration of suitable names is now common. Goods are divided for the purpose of international classification into 34 classes and the relevant ones for computer programs are Class 9 which contains scientific apparatus, and Class 16 containing paper articles.

Increasingly, marks for programs are registered in one or both of these classes.

Protection of the name of a program as a trade mark may also help to protect the program itself. One of the features of UK trade mark law (largely contained in the Trade Marks Act 1938) is that use of a mark by a licensee is deemed to be used by the proprietor. So where a trade mark is licensed with the program to which it is attached, the licensee will usually become what is known as a registered user and be recorded as such on the register.

The Registrar of Trade Marks then has to be satisfied that the proprietor is able to control use of the mark. So the licence agreement for the trade mark may be able to serve as a means for the proprietor to assert a measure of control over use of the licensed program.

A weakness of UK trade mark law is that marks can be registered only for goods and not for services. Thus whilst a mark can be registered for a program as goods, or for goods (such as paper printouts) produced by a program, it cannot be registered for computer services provided by a program. Many other countries, the US and France for example, provide for the registration of service marks and there is undoubtedly a strong demand for such marks in the UK.

Reform of British trade mark law was considered by the Mathys Committee* which reported in May, 1974. Evidence before the Committee was in favour of service marks and the Committee itself recommended that provision be made in the Trade Marks Act for the registration of marks used or proposed to be used for distinguishing services offered in the course of trade or business.

The provision of service marks would be of substantial benefit to the computer services industry and it is difficult to understand why it should be deprived of the marketing advantage possessed by its overseas counterparts.

Evidence presented to the Mathys Committee showed that 19% of new marks registered in the US were service marks and this proportion was increasing. So industry in that country, including its computer services industry, is making use of this method of promotion. It would not be difficult to amend the Trade Marks Act nor would it take up much legislative time; the Committee itself thought that what would be necessary would be to replace the word "goods" by the phrase "goods or services" wherever appropriate throughout the Act.

The Mathys Report is now over seven years old but no significant steps appear to have been taken to implement this important recommendation relating to service marks.

Here is another way in which the government in the Year of Information Technology can assist the growth of information services.

Bryan Niblett

* **Report of the Committee to Examine British Trade Mark Law and Practice, Cmnd, 5601, HMSO (May 1974).**

SYSTEMS THOUGHTS

Educating the analyst for the Eighties

Owen Hanson is head of the Centre for Business Systems Analysis at the City University.

FOR those of us who entered computing in the early Sixties, the coming of third generation computers later in the decade meant that we had to revise many of our ideas, particularly in terms of addressable main storage, high-level commercial languages and the provision of systems software in general.

After that there was a lull of about ten years, during which such changes as took place — magnetic core storage being replaced by MOS, storage sizes increasing from 128 Kbytes to eight Mbytes and regular upgrading of magnetic disc performance and capacity — did not require a fundamental rethink on the way that the average DP department operated.

The first indication that things were changing by orders of magnitude was the advent of programmable calculators. In the late Seventies a T153 or equivalent Hewlett-Packard cost over £100. The price of the T159, with its 960 program storage positions and magnetic card reader, is still around £150. However, its processing power and storage capacity are similar to those of the IBM 1401G of 20 years ago.

The glamour has moved on from programmable calculators, useful though they are, to microcomputers. Where minis had brought the benefits of computing to small organisations, micros offer, or seem to offer, something to everyone.

Even the one-man company can now afford his own computer, although most of the one-man outfits I know are in fact agents who sell micros, rather than users!

Following this train of thought led me, as I suppose it should, to a question that all of us who educate (or train) systems analysts have to ask ourselves: Is the sort of curriculum we offer still appropriate? If not, how should we change it?

In trying to answer this, it is worth spending a moment looking at the courses open to system analysts.

Far the most popular is the NCC basic course, which leads to a certificate. The original pattern was for six weeks, but versions of it that take as little as four weeks are to be found.

For those of us who went through the IBM mill, a four-week NCC basic course sounds roughly the same in terms of intensity. A course of this length can clearly only build a basis for the development of systems skills, and even to do this it requires a reasonable knowledge of both programming and the way organisations operate.

The NCC advanced courses, although designed by educational bodies, were run by very few of them. The Civil Service College ran these modules with some success, but there has been no blossoming of interest such as occurred with the basic course.

The only advanced systems analysis courses available outside the manufacturers are run by universities or polytechnics. There are three master's degrees, at Aston, LSE and the City University.

The City programme has been run since 1973. Four mornings a week are spent on lectures, under the headings of computing fundamentals, data processing, design and implementation of information systems, and human communications.

Students spend three afternoons a week on case studies. Sometimes they work in teams, in others singly or in pairs.

Over the last nine years, a great deal of new information has entered the course.

The problem is that very little can properly be left out. So far we have responded by working the students harder, and bearing in mind the industry they are entering, that is no bad thing. However, at some stage we may have to accept that enough is enough.

Certainly, the environment in which a systems analyst operates has changed radically since the mid-Seventies. True, some analysts will find themselves mainly concerned with the application of diverse micros in an organisation, rather than in a conventional DP department.

However, it remains true that the main concern of a systems analyst is *not* mere knowledge of hardware and software, important though they are as tools. It is the ability to analyse a business or administrative system and see how to meet the needs of the humans that system is intended to serve, by applying the tools of system analysis.

A well-educated analyst will be able to adapt to the needs of micro, mini, mainframe or supercomputer installations. Once in a job, it can be too late to learn how to consider the needs of other people, and how to communicate effectively with them.

Owen Hanson

FOCUS

Sorting out the nets

DURING Information Technology Year the industry can expect a whole bundle of related events, promotions, publications and contests. Already scheduled is a special Science Museum exhibition, an IT Race Day at Newmarket, a yacht race, an IDPM Open Day at Dudley College and an IT Preparation for Life conference.

One factor in common — apart from the mandatory presence of Kenneth Baker, Minister for Information Technology — is the concentration of office communication systems. This fast developing area is being given coverage in trade and business publications. As a result we are all being bombarded with information on DDP Nets, PSS X25 Networks, Local Area Networks and so on.

For many readers, the sooner the assorted nets are switched to a standard package the better.

In the meantime, the standard office communication package remains the mail box or telephone, with telex seen as an attractive alternative channel for companies with overseas operations.

Despite industry attempts to confuse the communication issue with such information sources as Teletext and Teletex, which as the office manager will quickly discover are not supertelex systems, the challenge of communication technology remains firmly the responsibility of such large international organisations as the petroleum and banking companies.

Closer to the installation base, communication is largely a matter of soundproof phone booths in the operations room, a hot line to the local service centre and sundry accident lines available for hooking into British Telecom the Test match commentaries or dial-a-disc facilities. Only the DPM qualifies for a private line, the number of which is known only to senior company management, user department personnel, the entire computer team, and industry suppliers. Being part of the PBX telephone systems, the internal phone network provides limited scope, with lines heavily involved between ops room and the programming section, or interfacing with troublesome users.

Communications were strongly featured in a timely IT industry contest sponsored by Philips which called for original designs for the Office of the Future — the future in question being specified as 2000AD. According to the organisers, in a few years time offices will be spacious, with a total lack of filing cabinets, typewriters, mail trays and naturally, paper.

The winning design, declared to be the most imaginative insight into the liberating potential of new technology, was a small attache case containing built-in communication facilities for receiving, processing and transmitting voice, data and textual material.

Just how office of the future communications links will affect the DP operation was not featured in the contest. However, remote work modes with or without attache cases must be involved, linking home, travellers and computer centre.

Alan Simpson

DOWNTIME

Worldly wisdom?

"WE offer you Datapro RE-PORTS ON WORLD PROCESSING for a trial period of one month free of charge, without obligation except to return the books at the end of the trial period if you decide not to subscribe."

The two errors in this excerpt from a publicity brochure illustrate nicely the purpose of the word processor advertised.

The question is: Are they deliberate?

Soothing the savage programmer

ANY old grape can turn water into wine, but it takes a man to turn it back to water again. So runs an old French proverb, translated for me by the Computer Weekly linguistic unit.

This process of turning wine, or any other alcoholic beverage for that matter, back to water is of special relevance to so-called computer professionals following the news that someone is writing a book entitled: Alcohol and the Creative Mind: A Practical Approach. It will describe how the timely consumption of alcohol in moderation can aid the creative process by breaking down conceptual barriers.

I have asked a number of creative computer people how they break down conceptual barriers, whether by taking alcohol, or other means.

One, an anonymous analyst from Ireland replies that he carries a plastic hip flask of Irish Malt from which he draws the occasional dram. "It aids my concentration," he tells me. "It also helps with my digestion. Many's the program that's crashed thanks to a bad stomach."

A London-based programmer has a different approach. "Artificially lit offices dull the mind," she says. "If I'm feeling dim, I pop out to an art gallery and bask in the light of genius. When I return I'm bursting with ideas."

Music is the third answer I heard. A small company tucked away somewhere between Brighton and Bognor has a musical half-hour every day. "We listen to something stimulating like Stockhausen's Stimmung," a budding young man informs me.

Getting wise?

FOR three years we have run a column under the heading 1984 and All That, which prints the silly things people in the media say about computers.

Nobody is infallible, and even Computer Weekly has on occasion put its foot in the trough of gobbledegook and verbal garbage.

I once caught a reporter of ours on an off day likening a portable computer system to a mythical pocket electric typewriter.

We printed this in 1984 and All That if only to prove that sacred cows are not worshipped here, and that we are big enough to take a self-inflicted knee in the groin.

But the national Press has usually been good for a poke in the eye — until recently that is. Entries for the column have been drying up like a frog in a desert as the media gets wise to the computer age.

So reader, if you wish to stay amused, keep an eye open for those gaffes.

Still the Sunday Times cheered me up the other week. It published a long interview with our very own Robb Wilmot which was full of blind banalities. In an attempt to explain the meaning of MIPS to the lay reader, the interviewer, one John Mortimer, wrote: "'MIPS' means Millions of Instructions Per Second; some highly intelligent microchips, it seems can absorb up to 25 MIPS, which is what sets them apart from Ray Buckton and the Aslef drivers."

Chad

Penny in the post

NEVER let it be said that the Department of Health and Social Security people are sluggards when it comes to paying benefits to the unemployed.

The DHSS computer discovered that an unemployed builder's labourer from Sheffield had been underpaid. Rather than adding the shortfall to the following week's cheque, the system made a special payment to avoid the man becoming out of pocket.

And so it was that the postman delivered the special cheque, valued at 1(one) penny, to the lucky man's home.

"I'm going to frame it," he said.

10 YEARS AGO

From Computer Weekly of March 16, 1972

A REMINDER that IBM is not just a computer company but is firmly in the information systems business was provided by the announcement of the IBM 3735 switching system, a stored program PABX designed to handle both voice and data transmission over a network of up to 2,264 internal extensions and 192 trunk lines connected to an external public exchange . . . . A magnetic tape cassette unit, claimed to be the first system designed to fall ECMA standards, is the first product to be announced by Computer Electronics Ltd . . . Honeywell has embarked on a major campaign to sell packaged solutions to the problems of conversion to new accounting procedures when Value Added Tax comes into effect in 1973.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, March 18, 1982

Howe not to solve our problems

THE Budget has brought a new injection of State funds for developing high technology. Following the Chancellor's announcement of a £130 million "innovation package", immediate back-of-the envelope calculations at the Department of Industry show that its spending on high technology (information processing and aerospace chiefly) will rise in real terms by one-sixth over pre-Budget figures to reach £280 million at current prices in the 1984-85 year.

This is not small beer. But the £130 million spread over three years is nothing when compared to the money being poured into similar programmes in Japan. A combination of public and directed private expenditure over there is reckoned to put anything up to $1 billion into the fifth generation computer project alone over the next three years.

The government here has made it clear that it is looking to private industry to put up the bulk of the development money and to shoulder the risk involved in keeping Britain competitive in the world of information technology.

It is prepared to act as a catalyst, and do what it can to set up a friendly infrastructure, but in the end free enterprise and healthy competition are the cornerstones of its policy.

□ □ □ □

Such a policy was outlined by Information Technology Minister Kenneth Baker in his response in January to a paper from the Electronics Economic Development Committee of the National Economic Development Council. The paper had basically called for more government initiatives and more government money.

What Baker has in mind when he speaks of infrastructure is telecommunications and broadcasting policies, national standards and data protection guidelines.

The government has been woefully slow in some of these areas though there are indications that the pace, on the telecommunications side especially, is quickening.

On a narrow view, therefore, there is nothing in the Budget for computer suppliers to get worked up about. On a wider scale, however, it is worth registering that the share of total DoI spending directed to high technology (chiefly IT) is to rise to 32% by 1984-85.

It is also worth registering the government's (pious?) intention to cut spending on old technology to nil by then.

Transcending all this, however, is the unquestionable fact that the best course of all for the spread of IT throughout our society is to get the economy moving again.

It is worrying that the government may be placing too much emphasis for recovery on the miracles of high technology, and too much of the burden for creating new jobs, without going far enough to ensure that they are created.

□ □ □ □

There are certainly more jobs in IT, but with unemployment at one in eight heading towards one in seven, it is sensible to exercise caution on just how many. For behind all the fanfare of the Information Technology Year remains the fear that the government has its public relations plans right but its economic ideas sadly wrong.

Saatchi and Saatchi sold Margaret Thatcher to the nation on a promise of lower inflation, lower taxes and a revitalisation of industry. The nation waits. The IT82 publicity campaign sold to the nation by Kenneth Baker is catching on well. But to what avail if there is no money to spend on its products?

In the meantime computer companies of all hues would do well to adopt the same stance as that taken by the head of one terminal distributor last week. "A good attitude is not to look for help from the government," he commented on hearing the Budget news.

Which is both true and wrong. British information technology companies will not conquer the world — will not even hold their own against the likes of France, let alone Japan and the US — without help. An extra £130 million is not enough.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by J. F. Marjoram of Dunstable, who wins £5.

Is this day and age when men and women are being replaced by the silicone chip and children's toys resemble space age computers, does it not seem strange that vivisection should be allowed to flourish?

Dunstable & Houghton Regis Plus

LETTERS — 1

Ex-employee's comments on DSS

ALTHOUGH your article about Dynamic Software Services (CW, February 18) may not have been explicitly incorrect, it could have been misleading. As an ex-employee of DSS, please allow me to criticise it on the following points:

i) DSS was set up less than two years ago — various divisions of Hawker Siddeley Dynamics Engineering (HSDE) are actually responsible for the "long pedigree" of botched, overspent projects.

ii) Perhaps you could ask John Bancroft (divisional manager DSS) why he is letting his own pool of "specialist skills" evaporate if they are in such short supply. From April 1981 to January 1982 approximately 20 technical staff left DSS — quite a turnover for company around 50 strong. Most of these were capable and experienced people.

iii) Particularly in its mining projects, DSS goes to the opposite extreme to "reinventing the wheel . . ." It invariably tries to take short-cuts by taking pieces from other existing (poorly-written) projects and desperately trying to cement them together to fit a new problem.

iv) The Virtual Graphics Machine (VGM) is very slow and cumbersome. On a PDP-11/70 (as used by DSS) there is barely enough room left to write the simplest Fortran application program for it. Further, the Minos graphics are hardly "sophisticated".

Most of the recent departures were experienced staff with good records at their previous companies. Most held degrees and were certainly not stupid or uncooperative, given any reasonable incentive.

By autumn 1981 company morale was very low and absenteeism correspondingly high, but the management did not seem to worry. Depression was fairly widespread among staff and was beginning to affect some of our lives even outside "work".

I hope that your feature has not encouraged anyone to consider joining DSS.

Name and address supplied

Viewdata potential

THE article referring to the ADP-/Aregon link on viewdata (CW, February 25) is a welcome move if it enables business to realise the vast potential of viewdata.

However, Mr Chandor's remarks regarding the fact that "high resolution graphics is expected to appeal to a very small proportion of users" demonstrate wishful thinking on his part, or a genuine misunderstanding of the market's requirements. In either case, I would suggest that it is this type of "marketing discipline" which has inhibited the deployment of both public and private viewdata to date.

If Mr Chandor had exhibited at Info '82, as we did, or indeed any other exhibition which would give him exposure to the market, he would have found that the demand for high resolution graphics is far greater than he imagines. We had over 300 of Britain's leading companies clearly expressing their interest in viewdata now that a high resolution graphic system is available.

Furthermore, the Telidon system we are offering has a very fast image creation facility when compared with present image preparation techniques.

The majority of businessmen know that effective communications and understanding within organisations depends on more than just the written word. It is easier and faster to assimilate complex charts and data if they are graphically presented. After all, the majority of people that managers are communicating with are the vital ingredient in a successful business — people. And that surely is the total raison d'etre for viewdata.

Finally, I would ask Mr Chandor to apply commercial logic to the following: If two viewdata systems cost approximately the same but one offers high resolution graphics and many other features including the ability to receive and decode Prestel — which would he purchase?

GRAHAM G. POULTER
Chief executive
Poulter Computervision Systems
Poulter House
Burley Road
Leeds

More letters on page 14

The Editor welcomes letters commenting on subjects published in Computer Weekly, or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication. Letters may be cut.

OS9 has caught up with its ads

FOLLOWING my letter (CW, February 25), concerning Microware's OS9 operating system, I had a most interesting conversation with Roger Phebey, of Microware Software (UK). He was able to clarify certain points concerning OS9.

Firstly, the 'Stylograph' product was not written by Microware, and since its writers could not produce a fully functional version, Microware has decided not to continue to support it. A replacement product is currently being evaluated, and should soon become available.

Secondly, Level Two is available, providing a suitable target system can be provided. However, Microware is in the business of supplying to OEMs, and consequently end users cannot purchase the product directly.

Finally, Pascal is now available, although this has only been so for a couple of months. This has meant that several of the early buyers of OS9, such as ourselves, have had to wait several months to receive this product.

Mr Phebey also pointed out that I had questioned the choice of OS9 by Positron as the operating system for its new microsystem. On the contrary, I think that OS9 is an excellent operating system, and when it is compared with others, such as SSB's DOS69, TSC's UniFLEX, SWTPc's FLEX09, and Motorola's XDOS (all of which we have run and evaluated, with several different configurations of 6809 system) it is obviously a far superior product.

It is well designed, programmed and documented, and stands a very good chance of becoming the CP/M of the 6809 world. However, early advertising suggested a more advanced product than was available at that time, and OS9 is only now reaching the level of completion which has been suggested by the advertisements for several months.

DAVID COWAN
Dept. of Applied Physics
Durham University.

Time for genealogists to write

FAMILY records represent an almost ideal database for handling by computer.

Many genealogists have data about hundreds of individuals to store and search: others are indexing thousands of names in parish registers or census records. Some have their own microcomputers, while others are using spare time on mainframes.

Many individuals must be tackling the associated programming problems for themselves and thereby reinventing the appropriate wheels for organising and searching the data.

The time is ripe for them to get together and share their experiences. The Society of Genealogists plans to organise in June this year a seminar to provide an opportunity for that exchange.

The director of the society, A. J. Camp, would like to hear from anyone who would like to attend or contribute to such a meeting. Write to him now at the society, 37 Harrington Gardens, London SW7 4JX, mentioning any special interest or progress you have made.

Similarly, the society is considering a newsletter on the applications of computers to records of genealogical interest. If you would like to subscribe or contribute to it, please let the director know.

A. SANDESON
Chairman
Computers Committee
Society of Genealogists
37 Harrington Gardens
London, SW7

Power of CAFS

IN his article on CAFS (CW, March 4) Philip Hunter says: "It is at present limited to batch query applications, and is of little use in online systems."

Piffle! CAFS is supported by one of the most effective online inquiry languages ever developed. Although CAFS can be very successfully used in batch mode, its principal value is in adding enormous power to online inquiry systems.

He says: "CAFS has limited applications." Poppycock! He was told that we have yet to identify *any* application which cannot benefit from CAFS.

On the relationship between CAFS and IDMS he has unfortunately interpreted the result of a small-scale early experiment as an indication of principal limitations. Please be assured that a proper synthesis between the IDMS and CAFS approaches is perfectly feasible.

J. W. S. CARMICHAEL
CAFS marketing consultant
International Computers Ltd
London SW15.

Economical financial planning

IT was interesting to note that Computer Weekly carried an item about the Institute of Directors using recently introduced financial planning systems on ICL hardware (CW, March 4).

These systems have been available on the Apple II for the past 12 months, called Micromodeller and Decision Modeller.

The system runs on an Apple configuration costing about £4,000. The Apple system, unlike the ICL, is portable, does not require skilled operators or preventive maintenance and can be used 24 hours per day.

F. BULLOCK
Sales manager
Personal Computers Ltd

Liveware File by Dou

LETTERS – 2

Putting one and one together

I FOUND the recent comments (Programmers Page CW Feb 25) concerning a loop incrementing by a step of 0.2 interesting.

The problem of unsure exit from such a loop arises, of course, due to the decimal number 0.1 having no exact binary equivalent, a fact of which many programmers are totally unaware.

In teaching binary arithmetic, it is interesting to convert 0.1 to binary form to a certain number of places, multiply by 10 (1010 binary), and convert back to decimal form. The answer will be close to, but not equal to, 1.

The following program written in Basic on a microcomputer has been found to oever leave the loop because X never attains the value of 6.3 for the above reason and requires statement 30 to read; IF X < 6.3 THEN 20. Also the problem arises of the number of steps made not being known.

```
10 X = 0
20 X = X+0.1
30 IF X <> 6.3 THEN 20
40 STOP
```

The answer is to increment by an integer, 1 in this case, and then divide by 10 if required for calculation.

F. V. HEATH
Senior lecturer
Department of Mathematics and Computer Science
Coventry Technical College

PHILIP HUNTER in one of his articles (CW Feb 25) states that "no other (than Algol 60 and Basic) serious language allows decimal numbers as loop parameters".

Fortran 77 allows them, but this has been recognised as a mistake by the ANSI Fortran committee and real loop parameters will not be in the next (1985?) Fortran standard.

In another article, he bemoans the lack of "DO NOTHING" statements. Many languages have null statements which are exactly this.

If a null statement is not thought sufficiently eye-catching it can always be commented.

DAVID MUXWORTHY
Program Library Unit
Edinburgh University

I WAS intrigued to read in Philip Hunter's Programmers Page (CW Feb 25) that there is no existing computer language with a proper DO NOTHING statement.

I would suggest that he reads the Algol 68 Report and in particular the part relating to SKIP.

SKIP does nothing and delivers an result, thereby fulfilling his requirement, as in:

```
IF condition
THEN
    statement
ELSE
    SKIP
FI
```

MICHAEL EGGLESTON
University Computing Service
Leeds

PHILIP HUNTER (Programmers Page CW Feb 25) bemoans the absence in "all existing computer languages" of the "command DO NOTHING".

I show here listings of two versions of a legal Pascal program. Each contains two statements which have no outcome, though you may find the latter a little more readable than the former.

```
program nothing;
begin
    if true then else
end.

program nothing;
begin
    if true then (nothing) else
(nothing)
end.
```

I have tested them and can assure you that they appear to do nothing most satisfactorily.

ANDREW WALLIS
Senior computer officer
Brighton Polytechnic

Program copyright – waste of time?

I WAS interested to read the letter from N. D. F. Bohm (CW, March 4). Unfortunately, I had not seen his original article nor the letter from Bryan Niblett, and therefore cannot comment in detail.

The question of copyright on computer programs has been of great concern to me over the past two years, not only as a solicitor, but also as a programmer and author of a commercial package for the legal profession, known as QUILL.

The experience has led me to the firm conviction that the development of copyright law to provide specific applications to computer programs can never provide a practical answer to the problems. In fact, perversely, the rights of the author and programmer would be better protected by an Act of Parliament specifically stating that copyright does not apply to computer programs.

More letters – page 13

I have spent a lot of time over the last two years worrying over the copyright problem in respect of QUILL. The suite of programs is now selling well within my professioo and this, in turn, has meant that the problem of copyright has grown.

My concern, however, is not of a pirating of the source code, but rather of a copying of the application. The code is fully protected and practical steps have been taken to ensure that it does not pass into unauthorised hands. In any event, the software has been so designed that a copy of the program would be of no benefit to any solicitor purchasing it from an unauthorised supplier, since the end product is specifically tailored to the user.

My main concern is that the application performed by QUILL, which is readily apparent on a detailed demonstration of the system, can be copied by other programmers and used for a computing system. There is no question that the application, or job that a program does, can be protected on behalf of the first person to devise such application.

The application performed by QUILL, having been devised by someone who practises in the target market, is accurate to the needs of the legal profession and, therefore, in much demand. I must accept, therefore, that the more systems of QUILL that are installed, the more the application of the functions QUILL is performing is disseminated and, therefore, the more likely it is that "copies" of the application are produced from competing sources. That is a fact of life which I have to accept, and indeed accounts for the fact that a lot of software generally tends to look the same.

A striking example of this effect is with Visicalc. So far as I am aware, this was the first analysis program of its type. There has now been an absolute glut of similar looking programs. No-one has stolen the software, but certainly a lot of people have copied the application. There can be no breach of copyright, or any other right, by copying the application and no-one expects there to be.

Another application that is producing many copies at present is in the field of program generation. The Last One was neither the last nor the first program generation system. However, there has recently been a proliferation of systems copying the application.

This leads me to another and more relevant point. If, thanks to program generation, it is going to become simpler and quicker to copy applications with program generators, the question of whether or not copyright exists in the source code is going to become even more irrelevant.

I do not expect that people should have a right to the design of a program and of its application. In my view, the only true protection to a right over a program lies in proper and careful marketing, tied in with contractual control over the distribution. I say that I consider the issue of copyright protection in programs is something of an irrelevance. However, there is one aspect with which I am most concerned.

I said earlier that I consider that the provision of copyright protection under law would serve against the interests of the programmers and authors. Ownership of programs ranges from huge multinational corporations to individuals. In my view, if you provide a specific right in law that can be the subject of litigation, then the sheer imbalance in financial strength between possible litigants, ie, the corporation on the one hand and the individual on the other, will mean that there is a danger that many individual programmers will find themselves simply unable to pursue such rights, or defend themselves adequately against claims.

Let us not waste time considering copyright protection, or we shall spend a lot of time and a lot of money building up a body of law by the time that program generation will have reached such a level of sophistication that programmers themselves may no longer exist.

GRAHAM ROSS
Birkenhead

N. D. F. BOHM (Letters, CW, March 4), is a lawyer who hangs his arguments over doubts about whether copyright can exist in computer programs on an old definition "Intended to afford either information, or pleasure, in the form of literary enjoyment".

In my view, anyone acquiring the use of a computer program under its copyright expects to enjoy the use of the instructions contained in the information the program contains.

Lawyers will, of course, dispute about the meanings of words in particular contexts, that is their job, but let us not be too impressed by the narrow arguments until the judges have decided against us.

At the same time, may I add my voice in support of early legislation to put the matter of the copyright in programs beyond doubt.

CLIFF DILLOWAY
Director
Dilloway and Son
Gloucestershire

Leave it to specialists!

ALTHOUGH not yet widely seen as invaluable in the computer industry, documentors, for very good reasons, are becoming more common.

However, analysts and programmers are still writing documentation which could be written by specialist writers. For this reason they are often prevented from moving on to the next profitable task, or contract.

Consider the computer programmer. Investigation shows that, when complete documentation is actually provided, he uses his time roughly as follows:–

30% Coding
30% Testing
30% Documenting
10% Communicating with analysts and users.

Perhaps the most frustrating task for a new programmer (particularly so with the high turnover of programmers in every company) is to be given a program to modify. Often the program arrives as a listing of code – no documentation, and no evidence of previous modification. The highly-paid employee can now waste hours unravelling the mysteries of another person's invention.

This really is inefficient.

All the programmers I know say that they "hate" documenting (there may be some who don't), and yet 30% of their time is spent doing this important task for which they are not trained. Surely they could be working more efficiently – to use a well-worn phrase "be more cost-effective" – without this burden.

Similarly, systems analysts spend much of their time documenting systems. Why not remove their burden as well?

Standards of documentation in the industry are generally agreed to be low, and often I hear "the documentation is terrible", or "the documentation is incomplete", or even more often "the documentation is written in a language which certainly isn't English". This is the area where the software documentor is invaluable.

My profession, as a software documentor, is to provide good, complete, structured documentation written in plain, straightforward English which can be understood by programmers, systems analysts, and users alike.

Where did I get this training? Well, someone offers a 36-week, fully integrated, diploma course in software documentation – not just a highly-expensive two-week overview of the subject. The course is based at Gloucestershire College of Arts and Technology. In fact, if you want a professional documentor, or want to train as one, I suggest that you contact Dr Keith Mason on Cheltenham 28021, ext 292, to obtain details.

TADEUSZ STONE
Churchdown
Gloucestershire

Plenty of activity on DO NOTHING front

A RECENT article of mine bemoaning the lack of DO NOTHING statements has generated as much correspondence as I normally get in a whole year.

Most of the letters give examples from various languages of statements that indeed do nothing. I make no apologies for omitting them from my article, because my point was that there is no explicit statement which says "DO NOTHING".

David Muxworthy of the Program Library Unit at Edinburgh University argues that many languages have null statements already and that if these are not sufficiently eye-catching they can always be commented.

Quite right. But surely the best code comments itself, and the existence of a DO NOTHING statement as an alternative to other null statements would cost little to implement and accommodate in a compiler.

Between the lines of some of your letters stands the accusation that I am pedantic about this and that there are more important issues for programmers. My defence was contained in the original article – since nothing is so often done, why not say so for the sake of structure and good sense.

Michael Eggliston of Leeds University Computing Service sent in an "if then else" block in Algol 68 containing the null statement SKIP, which does nothing and delivers no result:

```
IF condition
THEN
    statement
ELSE
    SKIP
FI;
```

Fine. But SKIP sounds as if it did something – it is after all an imperative in English.

As a matter of light relief, Andrew Wallis, a senior computer officer at Brighton Polytechnic, sends in an example of a whole program which does nothing:

```
program nothing;
begin
    if true then else
end.
```

Microcomputers are already helping out in Job Centres for matching people with prospects. They may soon be helping assess welfare benefits as well . . .

by Philip Hunter

System to help claimants get DHSS benefits

HAVE you ever suffered the harrowing indignity of seeking succour from Her Majesty's Department of Health and Social Security? If so you will know that every penny won is paid for in interminable waiting and form filling.

This could all change, however, if a welfare benefit system developed at Surrey University is ever adopted for general use. It would help solve two problems claimants have:

1. ignorance of what benefits they are entitled to.
2. horror at the prospect of giving away personal details.

The DHSS has bought non-exclusive rights in the system for further development, with Surrey University acting as consultants. Trials are taking place at several places, including the Citizens Advice Bureaux and social services departments of local authorities.

ERICA, the Research Institute for Consumer Affairs, will take part in evaluation and design of a final system later this year after further development, and early next year the DHSS will decide how to implement the system for general use (hopefully).

The system enables an inquirer to choose the appropriate block of questions under such headings as housing or sickness benefit. Then a series of questions, worded as simply as the complex dictates of the welfare benefit system allow, comes up on the VDU.

When the answers have been completed and analysed, a printout tells the claimant how much he or she will get for each benefit. It also tells which offices have to be visited and which forms have to be requested and filled in.

The system will not at present replace the forms, but will at least ease the whole tiresome and degrading process of what the doleful call "the rounds". The claimant is given an easy introductory tour of the welfare maze and will sometimes discover benefits never dreamed of.

The system was initially developed by Dr Nigel Gilbert, lecturer in sociology at Surrey, and Marie Lawler, a social worker in the Social Services Department at Brighton. Preliminary trials were successfully completed at Brighton last July.

As the system exists for the claimant's benefit only, it need not be confined to social security offices. It can be installed in public libraries, community centres or elsewhere.

In the future all assessment will be computerised and it will probably only be necessary for claimants to visit the office concerned with making the payment.

Gilbert tells me that a clutch of unique problems arose while building the system. One of these concerned the complex circular reasoning used to assess overall benefits.

"Benefit A might depend on benefit B, benefit B on benefit C, and C on A," Gilbert laments. Happily it was always possible to break the circle somewhere and find an ordering of the calculation which avoided such recursive logic.

Another problem was, and still is, the testing of a system into which such a baffling host of inputs may be made. This has been answered to some extent by having the system thoroughly examined by both the DHSS and ERICA before committing it to the public.

"Test papers are being input now," says Gilbert.

Yet another difficulty whose solution was vital to the success of the venture was coping with wrong answers. How does the unskilled user correct wrong answers and get going again without further mishap? Sounds easy, but in fact it caused a few headaches for Gilbert.

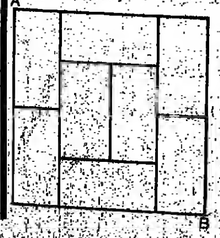
"We divided the program into ten blocks so that when a user makes a mistake, he can type in one of the three words ERROR, WRONG or MISTAKE and then re-enter the appropriate block, housing for example, and return to the question he got wrong to retype the answer," Gilbert explains.

Other systems working on similar principles have been set up at Cardiff and Harlow. But this one promises to be the first of widespread general application.

To bring together the various groups working on the computerisation of welfare, the DHSS has organised a two-day conference to be held at Surrey in July.

"Just think – if we hadn't had fingers, we'd have had to work in binary."

PUZZLER



TRY this one in your head. The task is to trace out a route from A to B, without passing over any line twice, so as to travel the longest possible distance.

If we imagine the network to be constructed over a 4cm × 4cm matrix, the lines take up a total length of 92cm. There is obviously no "perfect" route which will traverse 32cm – but there is one that covers 24cm. See page 54 for solution.

In the March 4 alphametic, one of the four TWO lines was left out of the addition sum. Apologies.

Data Logic boosts its marketing team

DATA LOGIC has made three top appointments. Martin Benson has been named marketing product manager. He will provide support services for users of the company's Intertel range of data communications products. He previously worked for Cable and Wireless and Racal-Milgo.

Joining him in the marketing department is Anthony Pinner, formerly marketing manager with Rixon Office Systems. Pinner, in his role as marketing manager, will support the range of Lexitron Corporation word processors.

David Bonny becomes sales manager, responsible for selling the Raytheon range of terminal products to government and named accounts. He rejoins Data Logic, having previously worked as account manager before leaving to work as national accounts manager at Geest Computer Services.

Stewart Burrows has been appointed Naval consultant at Ferranti Computer Systems. He spent 36 years in the Royal Navy, retiring earlier this year having reached the rank of captain. His post at Ferranti will give him responsibility for liaising with the Ministry of Defence (Navy) and overseas Naval authorities.

Syed Talukdar has joined Microtech Management Technology's engineering team to help carry out the company's new quality control policy of testing machines before distribution. He previously worked for Reuters in London, working on DEC PDP-8 machines. He has an HND in electronics engineering.

Ray Spiers has become marketing manager for Sigma's range of computer graphics and image processing systems. He joins the company from IMLAC International, where he was a product manager. Before that he worked at the Shape Centre. He is a member of the British Standards Committee on Graphic Languages.

Director named

SYSTEMS Production has named Jamie Jamieson as director and general manager. His previous appointments at director level have included divisional manager of the Welsh factory of Perkin, Elmer; managing director of Richard Garrett Engineering and most recently, director, Northern region, of AFA-Minerva (BMI).

Jamieson is a qualified electrical engineer. He spent 19 years in the RAF's engineering branch.

■Kevin Leslie has joined MSA as systems consultant responsible for implementing and supporting MSA's payroll and personnel system. He was previously a payroll applications specialist at ICL.

■Peter Hodgskins has been appointed area sales manager for the Eastern Counties and the East Midlands at Coda Systems. He was previously an area sales manager with TI.

■ Michael Dineen will succeed Godfrey Laurence as chairman of Extel Computing. Laurence has retired. Dineen is a director of the parent company, Extel Group.

■Alan Haymens has been appointed general manager of Missing Link Computers. He was previously personnel systems consultant with Tymshare.

■Bill Barrack has joined Beckman Instruments as sales engineer, responsible for electronic components and multimeters in Scotland. He was formerly a sales engineer with Mecro.

■Brian Banks has been appointed secretary to the parent and subsidiary companies within the CAP group. He was formerly assistant company secretary with Rentokil.

■Derrick Norris has joined Redifusion Computers as territory manager for the North-east. He was previously with Kode as regional manager.

■Peter Doyle has joined CACI to help strengthen the company's position in the ICL database market. He was previously with Racal Management Services.

■Peter Henrick has joined Direct Programming Services as a sales representative, responsible for ICL sites. He joins the company from ICL where he was London manager of external services.

Reshuffle at Geisco

GEISCO is to manage the Telecommunications and Information Processing Operation, parent General Electric's in-house telecoms and DP business. The arrangement will concentrate General Electric's computing and communications resources within one organisation. Geisco has appointed three senior vice-presidents to coincide with the changes.

The new programs management operations will be headed by Arthur Marks.

The sales and services operation will be Michael Emmi's responsibility.

Raymond Marshall, vice-president, senior technology operations, is responsible for engineering, systems and the Telecommunications and Information Processing Operation.

DIARY

MARCH 24

Presentation by R. E. Barnes, general manager, Computer Group CWS. IDPM North-Western branch. New Century House, Corporation Street, Manchester. 6.30.

MARCH 31

Annual General Meeting. IDPM Norfolk branch. Castle Hotel, Norfolk. 7.45.

Communications between users and computer people. Joint meeting of IDPM Kent branch and Chartered Institute of Secretaries. Oak Room, Royal Star Hotel, Maidstone. 7.30.

APRIL 1-3.

Portable software – Modular II and Small Talk. USUS (UK) conference. Lancaster University. Details Chris Sadler on 01-980 4811 ext 650.

APRIL 7

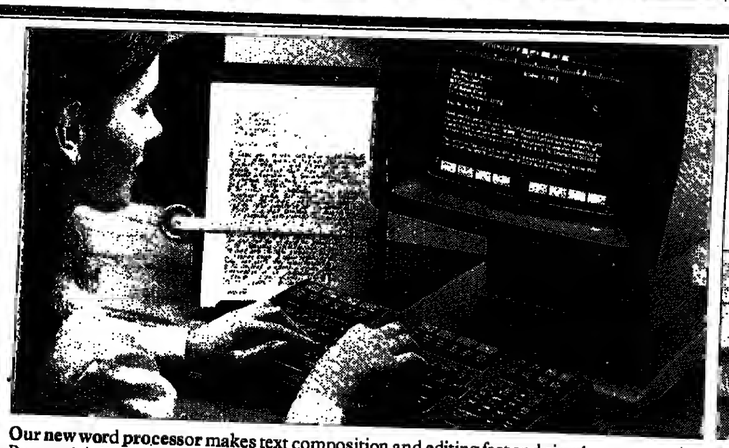
The increasing popularity of APL. IDPM Central London branch. Altergo Software, Imperial House, 15-19 Kingsway, London. 6.30.

CONFERENCES

■THE legal implications of the use of computers will be considered at a conference to be held on May 19 and 20 at the Connaught Rooms, London. The present government's proposals on data protection and privacy and the implications of last year's Green Paper on Copyright will be presented, with case studies. Fee is £196+VAT. Bookings by post should be made to School of Business Administration, 5 Elwick Road, Ashford, Kent TN23 1PD. Details on (0233) 22101.

■SECRETARY of State for Trade John Biffen will be the opening speaker at a conference on trade opportunities in India, to be held at the London Hilton on March 24. Sponsored by the British Overseas Trade Board's British and South Asian Trade Association (BASATA), speakers will discuss the financial side of Indo-British business, and major development projects in India. Practical guidance will be given on the best ways of penetrating the Indian market. Fee is £85. Details from Katie Walker at BASATA on 01-379 7400.

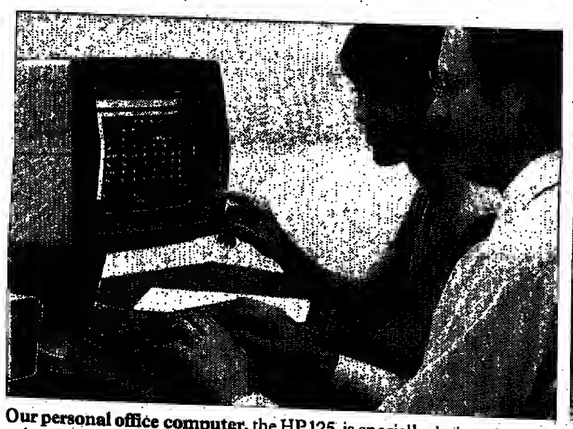
The Interactive Office.



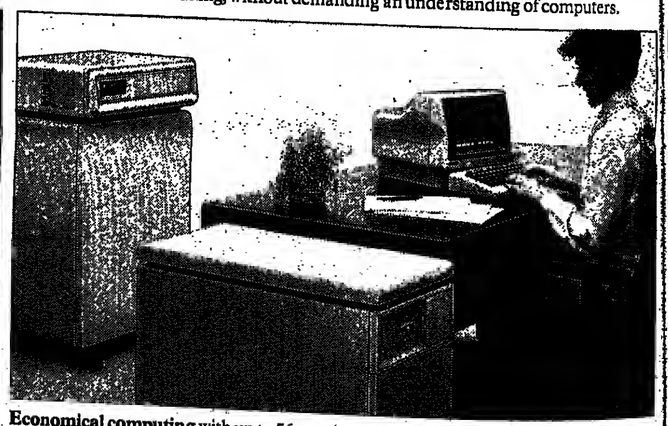
Our new word processor makes text composition and editing fast and simple. Because it is linked to the computer, it can also process data.

This manager's workstation gives business professionals easy access to the information they need for decision-making, without demanding an understanding of computers.

Our new high-performance HP 3000 Series 64 can handle 100 interactive users while processing big batch jobs like the company's payroll.

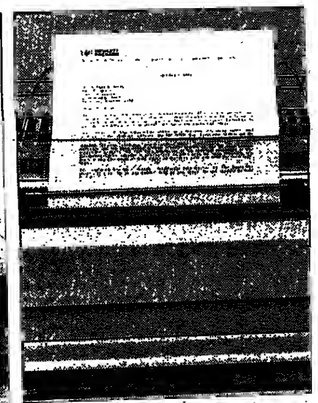


Our personal office computer, the HP 125, is specially designed to handle a manager's individual needs – including word processing, graphics, and data analysis. It communicates with big computers, too.



Economical computing with up to 56 terminals. That's what you get from the new HP 3000 Series 40. Use it as a central processor in a small office or as part of a network.

Graphics created on this low-cost terminal can be plotted on paper or transparencies.



High-quality printing for business correspondence and reports can be generated on this letter-quality printer.

Hewlett-Packard announces a major contribution to productivity in the office. It allows you to integrate the four major resources your staff need to do their jobs faster and more effectively – document management, personal computing, support for decision making, and communications.

Based on the expanded family of HP 3000 computers, The Interactive Office brings powerful new word processing, data processing and business graphics capabilities to a wide range of users, including secretaries, managers, and other business professionals. Now, much needed power and vital information can be placed in the hands of all who need it – whether they work within the same office or on opposite sides of the world.

If you'd like to see The Interactive Office at work, call your local Hewlett-Packard sales office and we'll arrange a demonstration. You'll see what a difference it can make to your business today, and how it can grow to assure even greater productivity tomorrow.

For more information, send for our new brochure "The Interactive Office". Just post the coupon. Or simply call your local HP office.

Hewlett-Packard Ltd, Winnersh, Wokingham, Berks., RG11 5AR. Wokingham (0734) 784774.

HEWLETT PACKARD

Electronic mail and filing for individual users will be part of The Interactive Office later this year.

High-volume printing on this laser printing system virtually eliminates pre-printed forms, letterhead stationery and long queues at the copier.

Data communications can expand The Interactive Office across the country or around the world.

Report generation is simplified by new software tools which let business professionals create reports and summaries in minutes without programming.

Local HP offices are also at Bristol, Redhill, Southampton, London Colney, Altrincham, Solihull, Castleford, South Queensferry – Scotland, Dublin – Ireland.

Send to Hewlett-Packard Ltd, Winnersh, Wokingham, Berks., RG11 5AR

The Interactive Office

☐ Please send me details

☐ Please ask a representative to call me for an appointment

Name_____

Title/Position_____

Company_____

Address_____

_____ Postcode_____

Telephone No._____ CW381

OP SPOT

Contractors still in demand, in spite of the recession

by Andrew Thomas

IT'S always risky making sweeping generalisations, and when I reported a recruitment consultant as saying that the days of the contract operator were over, it was too much to expect that no one would challenge the statement.

KPG Computer Support Services is based in Richmond, and is very much alive, claiming to be the largest supplier of contract operators in the UK. KPG (Key Programmers Guild) originated in 1970, with the operations division starting in 1973.

According to managing director Brian White, the contract ops market really took off at the end of the last recession, around 1975, peaking in 1979.

"The market appears to fluctuate in a five-year cycle," says White. "After the peak in '79, the current recession started to bite and reduced the demand for ops. Mid-'81 saw the nihilism, and demand has increased steadily since then."

Fifty per cent of the company's revenue comes from contract operators, the remainder being derived from software activities and a word processing bureau. In charge of the operations side of KGP is Martin Duggan, with Mike Palmin, Gary Totten, and Steve Green completing the team.

All four are ex-operators, and have all worked as contractors, which puts them in the admirable position of knowing the business from both sides. When I put to them my humble opinion that operating was, and to some extent still is, the best place to start a career in computers, I received universal agreement.

"It's not the best place to start, it's the *only* place," said Duggan. Interestingly, it is not only the normal jobs in DP that the men from KPG consider are helped by a grounding in operations. "Any salesman without an operations background is at a significant disadvantage," ventured Duggan.

"Operations managers now have a much better idea of what is going on than was the case five years ago," said Totten, "having come up through the ranks in a similar environment to that which they find themselves managing."

This is certainly true of my experience of ops managers in the mid-Seventies. Having only operated small machines with rudimentary operating systems, they are out of their depth and out of touch with the machines under their control.

"The same is true of DP managers," said Duggan. "We're only just getting the first ones, in the larger installations at least, that have any previous experience of working with computers at all."

"The early DPMs were just middle managers who happened to be in the right place at the right time, maybe in charge of punch-card machines, and were given the responsibility because there was no one better qualified to do the job."

The typical contractor handled by KPG has five years' experience, and they are unlikely to consider operators with less than three years. "There's no way they can be good enough with that amount of experience," said Palmin.

"A contract operator must show that he is better than the permanent staff at a site," said Duggan. "He mustn't be cocky, but in control of the situation."

"The whole nature of operating has changed," he continued. "Companies are involving operators more outside the machine room, getting them involved with job assembly, RJE work, and learning JCL, rather than being stuck in the basement and forgotten."

But in the machine room itself, more specialisation is creeping in. The versatile operators of a few years ago are giving way to printer minders, tape loaders and console operators.

"I couldn't face just loading paper into a printer all day, could you?" asked Duggan. I had to admit that the idea hardly fired my enthusiasm.

"There's more pressure on operators these days," said Totten. "And less job satisfaction. But a good contract operator has the width of experience to react quickly and correctly to unforeseen circumstances."

"A permanent operator is so used to doing things in a particular way," added Duggan, "that should the unexpected occur, he is unlikely to react as quickly as the contract man who will have worked on many different sites. Contractors have to think on their feet."

As to shift sizes, there is, apparently, a trend to fewer staff. "But some of the banks still have 65 on a shift," observed Palmin. What they all do remains a mystery to me.

"The average contractor works for four or five years and then gets out," said Duggan, "But we have people who have been with us for nine years."

Companies usually only want to commit to six-month contracts, with an option to extend. Some people have been on the same contract for over two years. "If you like a site that much, you'll probably end up working there permanently," said Totten.

"We've got one bloke who's been working at ICL in Bracknell since 1977," said Duggan. "I think they must think he's permanent."

On the subject of which machine experience is in most demand, it appears that IBM is top of the list.

"Three or four years ago, IBM and ICL were about equal," said Duggan, "But it's IBM operators and JCL writers that are most in demand now."

WHITE (left) and DUGGAN . . . "There's more money to be made in the US than the Middle East."

> **"We won't send out any cowboys. There is no longer any place for them in the market. Our operators are our ambassadors, without them we are nothing"**

Also in short supply are VME/B SCL writers. "There isn't much demand for George 3 macro writers now," he added, "although George operators and shift leaders are still needed."

It's nice to know that I could still get a job.

"You could start tomorrow in the West End, and get around £200 a week as an operator," he told me. Apparently it is unusual for a company to ask for a shift leader, but it is not unknown for a contract operator to find himself doing a shift leader's job.

Only about two per cent of the operators on KPG's books are women. "We get quite a few women inquiring about contract opportunities, but not many of them actually follow it up," said Duggan. "They don't often want to work too far from home, while the men enjoy moving from place to place. But we have got some very good female ops."

Permanent salaries have increased to the point where contractors are no longer earning many times the money, if you take into consideration the fact that, although the weekly wage is higher, the contractor will not be earning it for 52 weeks in a year. Neither will he get paid for holidays or any time taken off for sickness.

I remember some years ago when we had a contract operator at my site. He arrived in a Morgan, and earned more than the DP manager, which did little to endear him to the operators. But the introduction of income tax on contract earnings, coupled with the better rates of pay for full-time ops, has led to much less friction than was prevalent five years ago.

"We won't send out any cowboys," said Duggan. "There is no longer any place for them in the market. Our operators are our ambassadors, without them we are nothing.

"If our relationship with the ops manager is good, they'll trust us to choose staff for them," he went on, "although we always recommend them to interview all contract staff before accepting them: It's better to find any incompatibilities before any personality clashes occur."

Duggan believes that there is currently too much emphasis on formal qualifications when recruiting operations staff, rather than practical experience and aptitude, an opinion with which I most definitely agree.

Although quite a few operators ask for overseas contracts, KPG prefers to concentrate on the UK market.

"This country's been good to us," said Duggan, "why should we go elsewhere?" Having said that, there are several people working in the Middle East at the moment.

KPG have an office in Atlanta, Georgia, from which it markets its services in the US. By the end of the year, White hopes to be sending contract operators to America.

"British operators are trained to act on their initiative," he said. "They are trained to think, while US ops just follow orders. The British operators are better trained, and less wishy-washy. There is as much money to be made in the States as the Middle East, and it's a bigger market.

"There's a terrific staff shortage in the US at the moment, and the UK ops with their wider expertise can make a big contribution."

Finally, I asked my favourite question:

"Do you know any DP managers with an operations-only background?"

"No."

There must be some out there somewhere.

In the communications industry

ONLY last week, one of my colleagues sat for over an hour in the reception area of one of our leading computer companies, waiting in vain for a meeting which had been cancelled without notice. The subject of the assignation was to have been communications.

A further example of insular thinking in the computer industry is what can only be described as the amazing sequence of events which occurred at British Ornithopters recently.

British Ornithopters has an extensive computer installation, which contains a wide selection of hardware from a number of different manufacturers.

Each supplier provides its own team of engineers to handle both routine maintenance and emergency repairs on its particular products.

One of the largest machines, the product of Worldwide Commercial Devices, developed a processor fault which proved to be beyond the repair capabilities of the on-site WCD engineers.

After many hours of fruitless investigation, they admitted defeat and sent out an appeal for help to the top processor man in Europe, who was flown in from Paris to effect repair.

On his arrival, the expert discovered the fault to be caused by the failure of a one-ohm resistor. Unfortunately, the WCD engineers didn't have a suitable spare on-site so had to set the corporate wheels in motion in order to locate one.

None of the WCD engineering centres had one, none could be found at any other customer site, and attempts to purchase one also failed. The only known source lay 3,000 miles to the west, and one was flown in from the US accordingly.

After fitting the precious part, the processor was fired up and ran perfectly. The total elapsed downtime had been one week. A few days later, one of the WCD engineers was sitting in the canteen, chatting to one of his International Mbwloflot counterparts, whose machines had been running perfectly throughout the WCD hiatus.

"What turned out to be the trouble, then?" inquired the IM technician.

"Oh, just a one-ohm resistor," replied the WCD man.

"Pity you didn't mention it earlier," observed the IM mechanic, casually slipping his tea.

"Why's that?"

"We've got a box full of them in our stores."

DISASTER

Any contributions suitable for inclusion in the disaster column will be gratefully received.

PRODUCTS-1

Memory device 'costs same as floppy storage'

A SEMICONDUCTOR based non-volatile memory system which compares in price with conventional floppy disc storage systems has been pioneered for use with the British-made range of Nascom and Gemini microcomputers by Processes Ltd of Clitheroe, Lancs.

Powered by an automatically recharged battery, each board can store 32Kbytes of memory for over 1,000 hours without external power supplies.

Designed around CMOS, the development offers read and write cycles up to 6 MHz.

These Nasbus and Gemini 80 bus-compatible memory boards may be used in parallel to provide up to four 64 Kbyte pages.

Among features are programcontrolled read and/or write protection and alignment of any 4 Kbyte blocks on any 4K boundary. Each board can be configured to provide two fully-independent 16K pages or one 32K page.

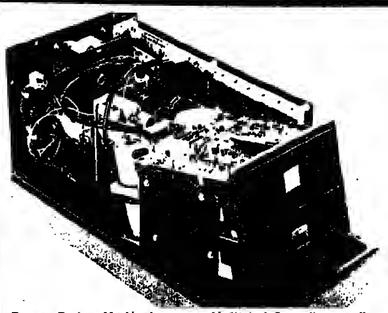
The company claims to have provided the maximum flexibility, performance and reliability, while minimising the number of components and maintaining highly competitive prices.

The non-volatility will be of particular use to industrial data acquisition systems where high data integrity is important, says Processes.

All options are link-selectable using wire links plugged into goldplated socket pins. Memory sockets can support any 2 Kbyte NMOS, CMOS, RAM or 2716/2516 EPROM.

The battery-backed memory board is the first product from the newly-formed Processes Ltd. Planned for launch later this year is a low-powered 8-bit processor board capable of running from its own rechargeable battery.

Processes Ltd (CW), 41A Moor Lane, Clitheroe, Lancs BB7 1BE. Tel: (0200) 27890.



Compact Business Machines' programmable 5¼-inch floppy disc controller.

OEM's disc controller

TO meet the needs of systems houses, OEMs and end users, a 5¼-inch floppy disc controller is available from Compact Business Machines.

The self-contained unit is programmable to suit most systems. Flexibility of use is given by up to 16K of internal memory (split between PROM and RAM), so that the unit can be incorporated by systems houses and OEMs into their own systems.

It has its own power supply and is also suitable for end user functions and microcomputer systems.

Plugging a printer into the RS232 port enables the unit to function as an offline printer for 5¼-inch floppy systems. Software is available to merge addresses from one file with a standard document on another file.

Compact Business Machines, Unit 5, Victoria Road, Portslade, Brighton, Sussex BN4 1XQ.

Cases for computer executives

DISC packs and cartridges that hold vital information often have to be transported by executives by car, public transport or aeroplane. Custom Cases has introduced the Custom Computer Disc Cartridge Case for this purpose.

It is made from scuff-resistant Unioyal Virgin ABS shells, riveted to a double valance "gasket" non-mitred aluminium frame. Nickel-chrome flush fitting locks provide extra security.

The company has also introduced a tool case for engineers. It comes with two interchangeable pallets, designed to hold tools, which may be removed when necessary.

The base of the case is divided into vacuum formed compartments to hold equipment. Both cases are guaranteed for two years and both have space for soldering iron and plug, documents, drawings etc.

Custom Cases (CW), Custom House, Britannia Road, Waltham Cross, Herts EN8 7HR. Tel: 01-882 2992.

Stations to suit the user

THE enclosures division of BICC-Vero Packaging has introduced a new range of desk-style operating stations for micro- and minicomputer users.

Each workstation is built around a conventional office desktop, finished in laminated plastic, with facilities to attach a variety of drawer units on one side, and a 19inch pedestal on the other.

The user can choose how many drawers he needs, and where he wants them, while the pedestal will enable a variety of electronic systems to be placed in an easily accessible location.

Each workstation can be made up from standard units to suit the various combinations of hardware being used, and to give the most effective ergonomic configurations for the particular office location.

Useful for desktop VDU applications is the optional cable tray which runs at the back of the top surface.

BICC-Vero Packaging (CW), 362 Spring Road, Shirley, Southampton. Tel: (0703) 433888.

High speed modems

TWO high speed modems for operation at data rates between 48K and 72K bps have been introduced by SE Labs. The SE35 and SE36 devices are designed for use in such applications as high speed multiplexer links, disc-to-disc data transfer, file dumping and load shedding, involving data transmission speeds that conventional modems cannot handle, the company claims.

The SE35 is used as a conventional baseband modem at either end of the link when transmission is required over telephone lines within a single exchange area. When communication is required over a long distance involving wideband transmission, the SE36 is employed with the SE35.

The SE36 modem translates the data on to a high frequency carrier for transmission over a telephone group band channel. Data transmission is synchronous at fixed rates of 48, 56, 60, 64 or 72 Kbps. Both modems are equipped with a CCITT V35 interface.

Using a typical line, the SE35 can transmit data at 48K over a distance of about 10 miles. In these cases, a four-wire private circuit is provided, and SE35s are used as baseband modems to convert the data signals to a form suitable for transmission over the link.

The SE36 incorporates an SE35 compatible baseband modem in addition to its group band functions. The SE36 is suitable for wideband transmission over satellite, microwave or coaxial links. In addition, the SE36 contains its own interface circuits, which enable it to operate on its own in applications where a tandem SE35 modem is not required.

SE Labs is a major supplier of data communications equipment to British Telecom. The company is a member of the Thorn EMI Group.

SE Labs (EMI) (CW), North Feltham Trading Estate, Feltham, Middx. Tel: 01-896 1477.

Wave Mate's Bullet microcomputer.

Bullet micros in UK

DATA Controls has been appointed UK distributor for Wave Mate microcomputers. The company will distribute the Bullet range of microcomputers, which are Z80A-based and form part of the 68B00 200 Series.

It is an integrated CP/M system, packaged in a dual mini floppy disc enclosure. It can be connected to any serial terminal.

The Bullet contains a Single Board Computer, which provides 64 Kbytes of RAM, two serial ports with transmission rates to 38.4K baud and optional DMA operation and Centronics printer port with optional DMA operation.

Data Controls, 89 Park Lane, Middlesbrough, Cleveland TS1 3LN. Tel: (0642) 248831.

Data logging unit with Basic

AN intelligent data logger which has full keyboard programming in Basic is available from Base Ten Systems.

The unit, designated mDAS/SP, has a built-in CRT display and cartridge tape recorder and a full qwerty keyboard.

It is supplied with an extended Basic instruction set.

The mDAS/SP is the latest in the range of Base Ten intelligent data loggers to have built-in microcomputer control.

Base Ten Systems (CW), 12 Belmoor Road, Farnborough, Hants GU14 7QN. Tel: (0252) 517665.

The Computershred HS from Ofrex.

Shredder range is based on findings of market survey

INNOVATORS in shredding technology for over 20 years, Ofrex now introduces the Ambassador range. This new generation of shredders is the result of worldwide market research carried out by Ofrex via its associate companies, dealers and customers into the user preferences and features required.

The personal desk-side models in the range include the Ambassador 200, 400 and 500 and offer parallel cuts of 2, 4 and 6mm.

The general office shredders, Ambassador models 900, 1300 and 1600 are designed around a new concept of waste collection which not only simplifies their use, but allows them to be operated up against a wall or open plan partition. Shreds are now collected in a mobile trolley underneath the machine, in place of the previous bulky, protruding polythene bag.

A choice of five shred widths is available and the machines handle a variety of paper widths at speeds up to 33.5m (110 feet) per minute.

Two high capacity models, the Ambassador 1300 and 1600 are designed to cope with the greater volumes of centralised, general office shredding. The 1300 unit has a 33cm (13 inch) throat, a choice of four shred widths from 6.4mm to 0.8mm and operates at up to 26m (86 feet) per minute accepting up to 30 sheets in one pass. Operating at a speed of up to 33.5m (110 feet) per minute, the 1600 model with a 6.4mm cut and 40.6cm (16 inches) throat accepts up to 30 sheets at a time.

For high volume, high speed printout shredding, the purpose-designed Computershred HS operates at 55m (180 feet) per minute producing 6.4mm width strips. It features four work shelves to enable the automatic shredding of four separate stacks of continuous stationery at one time.

Ofrex (CW), Ofrex House, Stephen Street, London W1A 1EA. Telephone: 01-636 3686.

The 3007 word processor from Dictaphone.

Low-cost WP launch

TO extend the scope of its Dual Display systems and provide "first-timers" with a low-cost standalone word processor, the Dictaphone Co. is launching the 3007 system.

This has a keyboard (qwerty, numeric pad and function keys), thin window display and 40 characters per second metal daisy wheel printer all in the one desk-top unit.

Under the desk is an electronics control package and single floppy disc drive giving the machine its own 140 pages of text storage.

As part of the Dual Display system, the 3007 does not need its own memory but dips into the shared system as required. Its printer can also be accessed by other operators while work is being keyed in by its own operator.

Price of the 3007 as a standalone unit with its own memory and processor is £4,700.

Dictaphone Co (CW), Regent Square House, The Parade, Leamington Spa, Warwickshire CV32 4NL. Tel: 0926-38311.

Fast matrix printer for small firms

RUSSET Instruments has introduced a fast dot matrix printer which, it says, offers interesting features to small business system users.

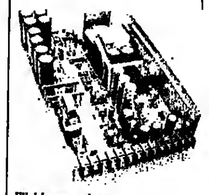
The Cardinal 2170 is a 132 column, 200chps dot matrix printer which can be supplied with two sets of tractors. The first set are bottom feeders and could, for example, print invoices without waste; and the second pair produce address labels.

The 650 million character, nine-wire head is true logic seeking and prints via a 10 million character life ribbon.

Intelligent features include tabulation, lines per page, form feed and bidirectional paper feed. Two standard character founts have five variations each, ranging from 9 × 7 to 9 × 14, to produce a wide range of character styles including NLQ.

Standard interfaces are RS232/423, current loop and Centronics parallel. A 16-key keypad allows manual control and one- to four-byte commands host computer control.

Russet Instruments Ltd (CW), Unit 1, Nimrod Industrial Estate, Elgar Road, Reading, Berks RG2 0EB. Tel: (0734) 868147.



Weir's new release.

Power needs for 8in drives

AS an addition to the SMM series of open frame switchers Weir introduces the SMM100/24 which is designed to provide the power requirements for 8in disc drives.

The SMM100/24 provides 24V 4A, 5V 4A, 12V 2A, -5V 1A outputs. An auxiliary regulator can be added giving a further 12V output at up to 1A as an option. In common with the rest of the SMM range all outputs with the exception of the -5V 1A are fully floating so giving the user choice of polarity. The 24V output can accommodate surges up to 5A to cope with the normal start up demands of Winchester drives.

Weir Electronics (CW), Durban Road, Bognor Regis, Sussex. Telephone: (0243) 865991.

Versatile bar code reader

DESIGNED to allow the addition of bar code wands to existing data collection terminals with RS232C interface, a versatile bar code reader has been introduced by Monolog Systems.

The reader is a free-standing, compact, bench-top unit, measuring 360mm long by 200mm deep by 100mm high, and operates from a standard 240V 50Hz electrical supply. It accepts Hewlett-Packard bar code wands, types HBDS 3000 or HBDS 3050, freely interchangeable.

The memory chip is incorporated within the reader, programmed to suit the required code. All standard codes can be handled and non-standard or multi-code units can be supplied.

Two versions of the Monolog reader are currently available: BC101-1 and BC101-2. The former offers 128 bytes of RAM, the latter 1024 bytes of RAM.

The only host installation requirements are a mains supply and an existing terminal/cable with a 25-way D-type connector using RS232C interface.

Monolog Systems (CW), PO Box 53, Guildford, Surrey GU5 0JT. Telephone: 0483-892881.

Modems fit most handsets

A RANGE of acoustic couplers comprising the MiniModem 3003 call and answer model and the MiniModem 3005 call-only model have been introduced by Modular Technology. The two new modems are smaller and lighter than their predecessor, the MiniModem 2001. They have been designed to fit almost any handset in the world, says the company.

The MiniModem 3003 is a call and answer mode version, with switchable selection and full test facilities. The new acoustic couplers are fully compatible with Modular Technology's range of hardwired modems, designed for use with leased lines and with public switched network approval.

Modular Technology (CW), P.O. Box 117, Watford.

SOFTWARE MONTH

Claire Gooding edits this month's special feature on networking, ranging across micro, mini and mainframe fields

Keeping networks on the right track

IN 1846, Isambard Kingdom Brunel lost the battle for a Broad Gauge railway system. Despite strong support for the seven-foot track, Parliament intervened to impose a standard gauge on new railways in the public network – a vital move if the railway companies mushrooming in Britain at the time were to stand any chance of providing a coherent service.

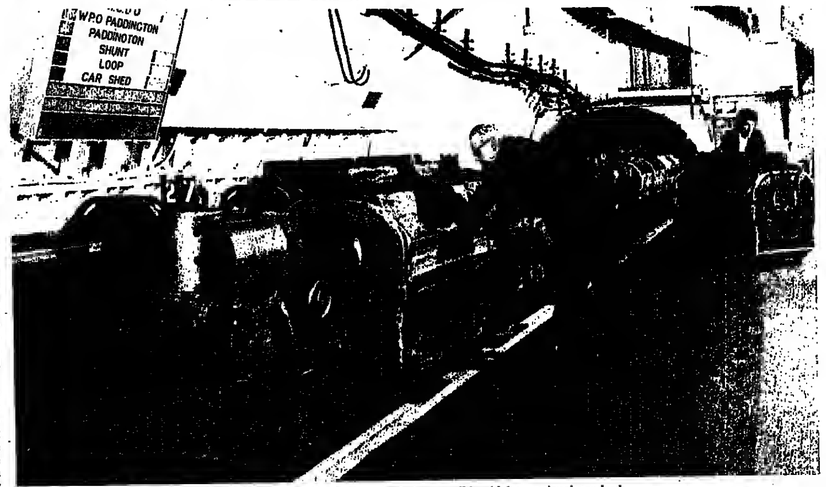
It was unnecessary to standardise private closed networks unless there was a need to interface the two systems.

There is more than a superficial analogy to be drawn between the problems of Victorian transport and current data networking technology. Within the public switched system, the X.25 recommendations of the International Telegraph and Telephone Consultative Committee (CCITT) have been accepted as the basis for packet communication systems throughout Europe and North America.

The same protocol has been implemented by independent packet network suppliers, for whom adherence to X.25 ensures total compatibility as the underlying technology progresses.

For purely local networks encompassing computers running on a single site, there is no CCITT standard. Sharply contrasting technologies have evolved: in addition to a star (in which communications are routed through a central processor) there are commercial networks based on a common intelligence bus and those linked through an endless ring.

Software Month takes a look at three live networks, in the microcomputer, mini and mainframe environments. The two at the bottom end of the scale are internal networks, run by the manufacturers themselves, while the mainframe implementation is running for a large user.



London's mail trains run (happily, closed) local networks which are completely incompatible with international standards.

Why major companies must conform to ISO standards

THE computer industry has had enough weary lessons on the need for standards, enough reminders on how much easier everything would be, if only people did things in the same way.

At the mainframe end of the market, networks are not experimental. Users have already been through one phase of distributed processing, and are now entering another, only with more powerful machines and communications facilities.

The European Computer Manufacturers' Association has been trying to crack the compatibility problem for a long time. ECMA deals with practicalities, and the International Standards Organisation, fed by the various national bodies like the British Standards Institution, deals with the actual services.

"The feeling is that we have to get rid of this damned incompatibility," said Clive Wood, of Univac's International distributed systems centre. "It should have been done at the other end of the Seventies decade."

Wood serves as chairman of technical committee for the ECMA work on networking, which in his words, are "trying to clear up 30 years of incompatibility at a stroke".

The challenge to get everybody thinking along the same lines is so complicated that ECMA has fixed on seven separate layers of networking technology.

The seven shown in Figure 1, are physical, data link, network, transport, session, presentation, and application. Each addresses a different stage of the link between different machines. Communication takes place "peer to peer", that is on the plateau between the same levels on different machines.

Physical layer is the cable or interface to modem.

Data link layer is the cargo, in the form of "packages" of transmitted data, etc.

Network is the end-to-end connection, or call control.

Transport is the communications agency, putting into effect the degree of service required (eg cheap, totally secure, high or low priority)

Session is the marshalling of data into "packages", the size and pattern of information which will mean something to the recipient.

Presentation is the formatting of the information to be received by a specific target, such as a VDU.

Application addresses the user's own resources such as directories; not yet a clearly defined area.

The setting of a standards is a long slow process, dependent on the presentation in exhaustive detail of existing systems. IBM's own Systems Network Architecture was excellently documented for the ISO, and Wood acknowledges that its existence, backed by the sheer weight and influence of IBM, may have influenced the overall ISO view of networking.

But IBM, like all the rest, will have to work towards meeting ISO standards. Some are further down the line than others. Univac's own DCA Distributed Communication

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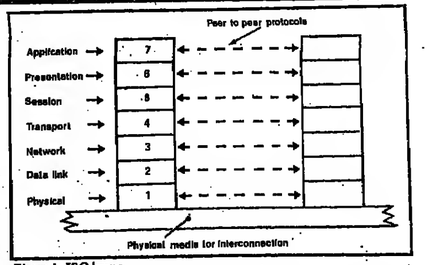

Figure 1: ISO layers.

WOOD . . . "Get rid of this damned incompatibility."

SOFTWARE MONTH

Meeting standards

● From page 23

Architecture was defined some years before ISO.

This means that Univac will now have to implement and improve its own protocols under DCA to migrate to the eventual ISO standard. "We want to be able to support gateways into SNA, because we co-host with IBM in a lot of installations," said Wood.

"Our own strategy is to end up with DCA equalling the ISO standard, but in the meantime it is vital to have a bridge between the service as a customer wants it now, and the eventual standards that ISO settles on."

Companies who have already gone down their own pathway on networking are faced with expensive alterations, although they have valuable experience to draw upon.

But all will eventually have to come into line; IBM's SNA, Burrough's BNA, Honeywell's DSA, NCR's DNA, Univac's DCA, and Digital Equipment's DECNET.

"The architecture is interesting but academic," said Gordon Peake, who is in charge of ICL's networking strategy. "You need a good healthy structure so that changes on one level don't affect another."

At the moment ICL has seveo or eight sites which are able to link, either in transferring data files to one another or in allowing a remote terminal to switch across to another network to connect.

"One of the troubles is that only the first four levels are agreed," said Peake. "Ultimately we will need to go across networks, linking level protocols. In the meantime we use our own *de facto* standards from NPL's Blue Book, so that our leading edge users can make connections."

While Peake struggles with the strategy, ICL's communications systems department is faced with providing actual solutions to specific problems.

"We see ourselves as opening doors ICL hasn't opened before," explained department manager John Gould. "It is our job to ease the path of customers wanting to implement networks, but we have to protect their investment, and make sure they're not locked into a development path which won't let them spread their wings later."

PEAKE . . . "Architecture is academic."

■ Micro users can now buy the popular CP/M operating system in a package with the high level language Cohol following a deal between Micro Focus, originator of CIS Cobol, and the CP/M firm Digital Research. Digital Research has recently entered the compiler market and will be concentrating on language sales as much as operating systems for micros.

■ Top-heavy software has been blamed for the problems suffered by users of IBM's latest top-range 3081 machines. German users including Grundig, Volkswagen and Messerschmidt have complained that particularly when using the TSO Time Sharing Option, the

ROUND UP

database system IMS and the TP monitor CICS, the machine performs below its potential, due to insufficient input/output capabilities. Otherwise the processor itself is actually faster than IBM promised.

■ Viewdata services have made another determined comeback, with the re-launch of a private viewdata service from D. M. England of its Miracle Viewdata, and a tie up between viewdata specialist Aregon International and ADP Network Services.

■ Systems consultancy Systema Designers has moved to Aberdeen, Scotland. The company predicts that the oil boom would make Aberdeen "the silicon valley of the future," and the move is part of SDL's widening of interests from defence into industrial and energy applications.

■ The database management system FMS80, designed for micro users, has reached Britain from the US where it has been a major success. However marketing rights to the product are confused because two British companies, Terodee and Infodata, have bought the marketing rights of the product from two different sources.

■ The government's microelectronics "awareness" programme is to encourage small companies to automate with the help of Computer Aided Design. Aimed principally at small companies in the printed circuit business, the scheme will account for £9 million worth of funds, mostly to go on research.

■ Software publishing pioneer Caxton has launched its first actual product, following the promises it made when the company was formed last year to provide "new standards" in programming and documentation. The product, called Optimiser, allows users to juggle around the ingredients of a problem, such as tight resources, until the most cost-efficient solution is reached.

■ Two compilers for the US defence language Ada have been released in the US, bringing the micro within the scope of the new real-time language. Western Digital-Corp's MicroAda is a subset of the larger language, but the programs written using it can later be recompiled by its more powerful counterpart.

■ The long-awaited Petnet network for the Commodore Pet microcomputer, has been made public. Petnet is a remote message and software network which will allow users to access a bulletin board, and dealers to demonstrate packages which they temporarily pull out of the network library.

■ IBM systems software specialist Altergo has launched its systems engineering service, to bridge the gap left by IBM's "systems programmerless" 4300 series. When the machine was launched, IBM claimed that the SIPO (Systems Installation Productivity Option) would provide packaged systems software in a form which made the customer self sufficient. Altergo asserts that the gap between theory and practice is worth filling with its own 4300 DOS/VSE maintenance service, which offers customers site visits as part of the service.

■ Software house Computer Resources has gone to the wall, but has been quickly snapped up by United Computing. Data Logic has bought the bureau interest, leaving just the international division on the shelf. Computer Resources had started well, backed by the ICFC, but the loan was not big enough to finance the company, and a prestigious contract with Saudi Arabia spelt disaster instead of success when payment was not forthcoming.

■ ICL has announced that it is to market applications software developed for its own use. For the first time the skills within corporate information systems, now part of the services group, are to be tapped for commercial gain. The department is building a worldwide network, planned to operate in all countries where ICL is active.

LAN suppliers fight for 'standard' status

WILKES . . . head of lab which developed the Cambridge Ring as a British challenge to Ethernet.

AS yet, the market for Local Area Networking is not strong enough to have thrown up a definite leader, but there are several contenders ready and waiting to fight for the *de facto* standard title.

Of the network configurations that have penetrated the UK market, Ethernet common bus systems and Cambridge Rings have attracted perhaps the greatest interest. Ironically, Xerox has done for Ethernet what Hoover did for the upright vacuum cleaner – provided a generic name for one of the major networking systems.

While the Xerox designed product and its operating standards can be licensed by commercial suppliers, several attempts have been made to model a network on Ethernet without employing identical technology.

By collaborating in the development of interface processors the major suppliers, Digital Equipment and Intel, are hoping to establish Ethernet as a *de facto* standard. Zilog, with its Z-Net system, is providing a down-market version but one incompatible with Xerox technology.

At the heart of Ethernet is a coaxial cable to which processors are linked through a transceiver device and interface board. With a single computer transmitting signals over the line to a remote terminal, the question of access priority does not arise.

Permitting multiple processors to transmit simultaneously, however, requires an access protocol.

For Ethernet and the lookalike systems, access is by carrier sensing. If the line is clear transmission can begin. Since the processors are independent devices, signals may be loaded from two or more nodes at about the same time.

But the co-axial cable can handle only one signal in a given "time window". If a collision occurs, a "flag" is raised at each node on the network while the processors affected launch their messages again.

The nature of the re-try mechanism makes it impossible to predict when a message will reach the receiving node. In the absence of a one-to-one relationship between transmission and reception, real time control signals cannot be sent reliably over such a system.

But for forwarding batched data and program material, the mode of transmission is not an obstacle. Current Ethernet specifications provide for a 10 Mbit per second throughput.

With a data transfer capacity of only 800 kilobaud, the Zilog Z-Net might appear less sophisticated than the Ethernet on which it is modelled. Working at a significantly lower speed, however, Z-Net requires a cheaper connection between the co-axial cable and processor since a smaller number of components is involved.

As the basis for a "small business" network, it follows that Z-Net would be a more attractive proposition than the Xerox alternative.

Research Machines is one computer manufacturer which has employed the Zilog technology for its educational networks, a criterion for which was a low-cost link for sharing printers and databases.

Retaining the common bus approach, an alternative to networks of the Ethernet type is one in which multiple signals are transmitted in parallel on the co-axial cable, using different sectors of the frequency spectrum.

Broadband operation has the advantage of being able to support both analogue and digital information in parallel bands. Video, voice and data can be transmitted over the same circuit if the application requires.

Compared with digital baseband, broadband technology is more expensive to implement. The advantage is that radically different protocols can be supported simultaneously.

Wang has opted for broadband operation in its Wangnet local area network. The system uses twin coaxial cables capable of 350 MHz operation; one line each for send and receive.

In the interconnect band, other manufacturers' equipment can communicate with the Wang processors at rates from 300 baud to 64 kilobaud.

Speeds up to 12 megabaud are available in the Wang band (for interconnection of Wang kit), while a utility band allocates 42MHz of bandwidth for video channels. Like the Ethernet systems, the datacomms component of Wangnet is based on a common bus design with carrier sensing and random re-try after signal collisions.

Popular though the communications "Ethernet" is proving, its re-try transmission technique precludes it from real-time applications. To guarantee that the intervals in a signal are identical at the input and output nodes, transmission must be linked to a clock pulse within the network.

A continuous loop joining the nodes is the basis of ring technologies – the second major category of data network. How the message is correlated to the timing sequence is a matter of choice.

One method is to have a fixed number of package transporters circulating on the ring. Only if there is a free slot in the carrier can a message be accepted from a node, the signal being held in a buffer until it can be forwarded. This "empty slot" approach to access priority is the basis of the Cambridge Data Ring, developed in the UK at Cambridge University's computer laboratory.

Toltec and Logica VTS are two commercial implementations of the system. A notional transmission speed for a Cambridge Ring is 10 Mbits per second, but the payload of the carrier is only about 40% of its total size. The effective

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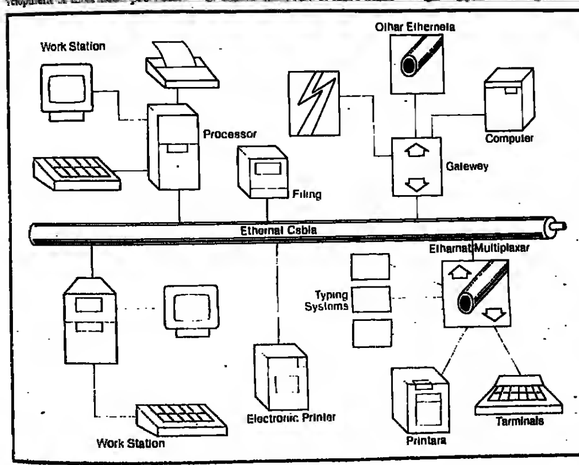

Ethernet system from Rank Xerox.

'Single approach is impracticable'

THE SPECTRUM of applications for networking makes a single approach impracticable. Each technology has its merits and weaknesses.

The need for two or more systems to co-exist as standards has been recognised in the US, where the local area standards committee of the IEEE is coming down to one bus specification, and one based on a contentious ring.

Local networks evolved during the 1970s to satisfy several requirements. The ability to distribute processing throughout an organisation was a consequence of the desktop microcomputers and "economy" minicomputer.

But high volume storage at every workstation was an uneconomic proposition.

Networks offered an effective solution for linking distributed machines to a central mass storage facility, printers, and other peripherals used only occasionally.

Another genus of network has evolved to take advantage of developments in a parallel technology. The influx of digital telephone systems, with their associated switching gear, has provided an ideal "star" framework for interconnecting processors without significant additional cost.

Distance between access points (nodes) on a network is always a limiting feature of their design. At the high transmission rates handled by local nets (0.5–20 million bits per second), the greatest point-to-point gap is of the order of a kilometre on most systems. But with repeater stations, the network can be extended.

Different networks on offer from UK suppliers

UK supplier	Network name	Distance	Network type	Access type	Speed (M bits/sec)
Apollo Computers	Domain	1 km	Ring	Token passing	10
Datapoint	ARC	6.4 km	Bus	Token passing	2.5
IBM	Series 1 Ring	1.5 km*	Ring	Carrier sensing	2
ICL	Microlan	300 m	Bus	Carrier sensing	1
Keen	Corvus	1.2 km	Bus	Carrier sensing	1
Logica VTS	Polycot	10 km +	Ring	Empty slot	10
Prime	Primenet	250 m**	Ring	Token passing	8
Sintrom	Perinet	2 km	Bus	Carrier sensing	10
Thame	Net/One	1.2 km	Bus	Carrier sensing	4-10
Toltec	Toltec	800 m	Ring	Empty slot	10
Wang	Wangnet	3.2 km	Bus	Carrier sensing/ frequency multiplexing	up to 12
Xerox	Ethernet	2.5 km	Bus	Carrier sensing	10
Xionics	Xibus/Xinet	***	Ring	Point-to-point	10
Zilog	Z-Net	2 km	Bus	Carrier sensing	0.8
3Com	Cluster/One	300 m	Bus & others	Carrier sensing	0.24

*Between Series 1 processors **Between nodes
***Operates by relaying data between processor nodes on ring

Announcing

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We are pleased to announce the opening of our new London office! Candle Limited will now be distributing and supporting software packages that monitor the performance of MVS, CICS, and soon, IMS installations. Candle Limited is a wholly owned subsidiary of Candle Corporation®—a California software company known widely for its development of the OMEGAMON® performance monitor.

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The Candle Computer Report is a newsletter that explores current topics and news in MVS, CICS, IMS and IBM hardware. It is provided free to IBM and IBM compatible installations. Just complete and return the coupon on the adjoining page for your subscription.

MCAUTO®—Monitoring multiple MVS systems using OMEGAMON.®

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Candle provides top level technical support to customers. We offer courses, seminars, videotapes, tuning guides, and special reports to help keep users up to date on how to monitor the ever changing IBM systems.

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For MVS installations, Candle's OMEGAMON® realtime monitor has gained worldwide recognition for being able to reduce IPLs. DEXAN for MVS helps analyze the performance of batch and TSO in realtime. EPILOG/MVS (available 1st quarter 1982) is a background performance management system.

CICS

OMEGAMON/CICS is a realtime monitor that warns of CICS problems as they are happening. The RTA/CICS option will display response time information graphically. ESRA/CICS is a new intelligent background performance analyzer that searches for response time problems and then looks for the causes.

IMS

In 1982 Candle will be introducing a series of IMS products. OMEGAMON/IMS, RTA/IMS, and DEXAN/IMS will provide realtime windows into IMS problems, response time and degradation. ESRA/IMS will perform in a background mode looking for and diagnosing response time problems.

!Candle Limited 21 Harrington Road, London SW7 3EU Tel: 01-581 5722

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Candle Limited offers a report on:

IBM LARGE SYSTEM ANNOUNCEMENTS

In 1980, Candle Corporation,* the developer of OMEGAMON,® wrote an MVS-SP and SE2 report that was requested by more than 1,000 companies. Now, Candle has written an extensive report analyzing MVS/XA and other large system announcements made by IBM on October 21, 1981. This report is directed toward both management and technical personnel.

Some questions addressed in this document are:

- **What are the implications of the pricing structure of the extended architecture software?**
- **Is large system distributed processing here (MVS/OCCF)?**
- **What is the future of MVS, VM, and DOS?**
- **What will happen to the 3033 series? The 4300 series?**
- **How does the 3880-11 Paging Subsystem compare to existing paging subsystems?**
- **What will be the performance benefits of the 3081 Dynamic Channel Subsystem?**
- **Will MVS/XA be easier to install, tune, and maintain?**
- **What will be the future of TCAM, VTAM, and BTAM?**
- **What will happen to IMS and CICS?**
- **What will be the impact of MVS/XA on your existing workload and on your currently installed software?**

!Candle Limited

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Current CPU:		Future CPU:	when
Current CICS Level:		Future CICS Level:	when
Number of CICS Terminals:		Future No. of CICS Terminals:	when
Current IMS Level:		Future IMS Level:	when
Number of IMS Terminals:		Future No. of IMS Terminals:	when

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SOFTWARE MONTH

Standards

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throughput therefore reduces to some four megabaud, accumulated from all the nodes in the network.

Reminiscent of the access control to single track railways, token passing networks like Primenet are the alternative form of ring technology. A token signal circulates around the nodes on the network: A packet can only be loaded if a node holds the token.

While local area networks are in general confined to one of the technologies – Ethernet or token passing ring, for example – satisfying a user's information processing requirements may involve drawing on features from different systems.

The Ungermann Bass Net/One system, marketed in the UK by Thame Systems, is a variant of an Ethernet common bus which can interface to a full standard Ethernet and, more recently, to broadband systems for voice, video and data channels.

One of its first applications in the UK was announced last week at St Thomas' Hospital in London where a five node trial supporting up to 100 terminals is being undertaken.

DR ADRIAN STOKES . . . putting the Ungermann Bass local network on hospital test.

Shared access to over 400,000 patient records is one of the applications being investigated by director of computing Dr Adrian Stokes (not a medical doctor) as part of a trial on behalf of other hospitals and the National Health Service in general.

Local area network technology is also moving towards the smaller business marketplace, with systems specifically designed for harnessing the more popular micros. Zynar's Cluster/One Model A network has been supporting Apple II machines, but from April this year, the system has been upgraded to handle the Apple III.

With a broader application base, the Omninet system being handled in Britain by Keen Computers interfaces to hardware as diverse as Apple II, Onyx C-8000 and DEC LSI-11. In each case, five to 20 Mbytes of store are provided by Corvus disc units.

BSC mainframes link to save costs

by Claire Gnoding

WHEN British Steel implemented its Coten network four years ago, the problem it solved was the common one of cost.

"The basic problem was that they were using umpteen star networks on lines hired from the Post Office," explained Michael Coon, one of the Leasco team who designed and implemented the product.

The resulting network links mainframes in Port Talbot in Wales, Ravenscraig in Scotland, Rotherham in the Midlands and Corby in Northants. There are terminals in Llanwern, Wales, Sheffield and Scunthorpe, as well as the terminals local to the mainframe machines themselves.

The network uses Ferranti Argus machines, and is written in the real-time language Coral 66.

The host mainframes are IBM and ICL, but there is a variety of terminals to be linked in to the system, partly because nationalised industries are forbidden to settle on any one supplier for their equipment.

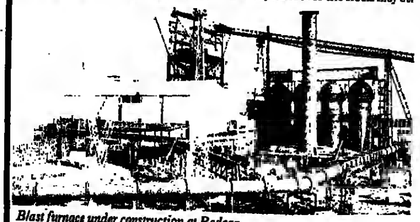
"A lot of the terminals were non-IBM and non-ICL, but could be used to emulate either," said Coon. "The user at any one terminal logs in, the call is set up by the network. The terminal user gets access to the minicomputer, and from there is connected into the mainframe."

Coten – the name stands for Corporate Telecommunications Network – allows the transmission of speech and data between major sites.

At the time of its implementation, X25 was still being designed, but British Steel's inability to link straight into an X25 network does not matter for a network which is strictly internal: British Steel talking to British Steel.

However, this working example does illustrate how a user's need can change. Coten is expected to support over 1,000 terminals by 1983, and the pattern of its mainframe hosts has changed since the system went live in 1978.

Mainframes have been re-distributed as plants such as Corby are shut down, but the all-important facility of linked terminals remains, wherever the hosts may be.



Blast furnace under construction at Redcar.

Prime adopts ring for network management

FOR users whose main concern is data carrying capacity, networks based on Xerox/DEC/Intel Ethernet technology have much to commend them. However, because these networks access the communications bus by contention (re-transmitting if two signals collide), these systems have limited application, where there has to be a one-to-one correlation between the transmitted and received information.

By adopting a ring approach, in which transmission is linked to a synchronised pulse, Prime claims to have overcome this obstacle. Primenet, the company's commercial network product, uses the token passing technique to establish a processor's right to transmit.

Designing the packet elements of the system to full CCITT X25 standard has provided complete compatibility between localised Primenets and the public packet switched system.

At Prime's UK headquarters in Hounslow, outside London, a purely local Primenet controls data communications between the company's four computers on the site. Through direct access to British Telecom's X-SwitchStream One network, and the London gateway to Telenet, Prime staff at this Middlesex base can have direct access to processors and databases worldwide.

Important though local communications are to the Primenet concept, Prime is the first to admit that the system is not strictly a local area network, but a technique for interconnecting Prime processors wherever they might be.

One feature of the Primenet application at Hounslow is the "soft" networking facility where an apparently unrelated network of processors can be defined at system start-up. Changes in operational requirements may involve a different datacomms web being constructed within seconds.

A typical configuration for a network through the headquarters Prime 750 would be on three levels. This processor would certainly be part of the local ring, which itself might show not just the four adjacent processors but s total of six.

Moving out from the four machine cluster – but still seeing the network from the Prime 750 processor – are links to other systems away from Hounslow. There is a synchronous line direct to the London exchange of the SwitchStream One service (the name for British Telecom's packet switched network) and bi-synchronous links to Prime machines in Feltham, Southampton and Bristol.

Once on the public switched network, the headquarters team has immediate access to any port on the network. Communications with the company's Birmingham office are over this packet link, as are those with Prime sites on Telenet or Tymnet circuits in the US.

Knowledge of access codes to other Prime processors makes it possible for an operator in London to communicate to a computer on a Primenet based in the US. The public switched system is used as the intermediate step in the link.

Both the switched systems and the node processor are transparent to the user as there is a logical circuit between his terminal and the machine.

A feature of Primenet which illustrates the value of running internal communications under X25 protocols is the File Access Manager. This allows network users to read and write files on a Prime machine without needing to know the exact physical location.

Software pirates – a threat to the industry's survival

THE software industry has an Achilles' heel. It takes vast amounts of effort to develop and market a package and its documentation, but actual production costs are trivial. Since copying is so easy, piracy presents a major threat to the survival of a healthy software products industry.

Two major approaches are being taken by firms trying to protect themselves: Legal instruments such as copyrights and licensing laws; and technical tricks, using hardware or software or both, which make life difficult for the thief. Beyond these, other strategies may be adopted to encourage payment, such as the provision of support and enhancements or – if the product is cheap – the lure of slick packaging and properly printed documentation.

Today, two legal instruments are in common use – copyrights and trade secrets. Some patenting has been attempted, but with little success.

Copyrights allow developers of publicly distributed programs to maintain an economic interest in them. Among other things, users of a copyrighted package are not allowed to make copies, although there is nothing to stop them using the ideas behind a product to write their own version.

Copyrighting a package is a relatively simple and inexpensive matter, although the procedures differ from country to country. For example, in the US, a copyright

SOFTSELL

notice must be put at certain prominent places, while in much of Europe the mere act of creation is sufficient to establish copyright.

Trade secrets laws are put into practice when package customers sign a licence agreement, in which they are granted certain rights of usage. These often contain additional clauses in which the customer recognises the value of the vendor's know-how that has gone into the product.

In these clauses, the customer promises not to pass on any substantial information about the product to third parties.

Patents are like super-copyrights. They not only forbid you to copy the software, but they also forbid you to even copy the ideas and build your own.

While the same legal means are used by all software companies, micro firms have given most attention to technical obstructions to piracy. Three methods are commonly used: Building in bugs; software obstructions to copying and hardware keys.

Building in bugs is all right for the vendor with only a small number of customers, who can give each good telephone support. The idea is to insert code into packages so that every now and then, say every 100,000 key strokes, the program simply stops.

The user is thus forced to telephone the vendor periodically, at which time he is given appropriate directions on how to proceed. In other words, the user is given an artificial need for support. Implemented correctly, this method can be easy to administer, effective, and commercially acceptable.

Software obstructions to copying usually amounts to fiddling around with the operating system, so that copying commands can be controlled as necessary. Another scheme is to adopt non-standard diskette formats. Vendors who do this generally have to provide their customers with a back-up copy.

So far, a variety of techniques with hardware keys have been tried out; most of them rather simple in nature. For example, packages have been supplied in ROM modules in normal ways, accompanied by password-containing PROMs which must be plugged into specific ports. The program then interrogates the port from time to time to ensure the expected data is present.

Life is easiest for the mainframe software vendors. Their customers are usually DP departments. The DP manager is little motivated to save money by stealing, because he has a large budget, he badly needs good continuous support, and because he does not want to run the risk of being sued.

Thus apart from support, mainframe firms are able to rely almost exclusively on legal tools to protect themselves.

Micro software vendors have a much tougher time. Although they use the legal and technical tools described, piracy is widespread. It is reasonable to think that for every package legitimately sold, at least one is pirated.

The thieves are a varied bunch. Three types predominate:

- Corporate organisations who buy a product, and pass copies around their own and neighbouring departments. Often, the culprits act in good faith.
- Microcomputer dealers, for example small systems houses or high street retailers.
- User groups, who often club together to buy a product, and then distribute copies between themselves.

Although today's mainframe vendors are relatively free from piracy, the next few years will inevitably draw them into providing their clients with microcomputer software. Therefore, the entire packaged software industry needs to be concerned with how to protect its investment in products.

On the technical side, the only really viable approach appears to be via hardware keys. Building in bugs is only practical for certain kinds of vendor; obstructing copying is bound to be unsatisfactory because users do need to make back-ups. And some users will work out how to get around the obstacles.

Given the co-operation of hardware manufacturers, it should be possible to develop effective and practical ways to piracy. A number of approaches look fruitful, such as recent developments in cryptology ("one-way trap-door functions") and gate array circuitry.

Another important requirement is that laws and lawyers need overhauling. As London-based barrister Alistair Kelman explains, Today's laws – especially the copyright and patent laws – simply weren't designed with computer software in mind.

Ferris is a consultant in the UK and US providing marketing and planning advice to computer vendors, particularly in the area of software.

David Ferris

How Texas Instruments links its sites throughout the world

WITH more than 12,300 interactive terminals, Texas Instruments' internal communications system ranks among the largest private data networks in the world. Linking sites in Europe, North America and throughout the rest of the world, the topology of the network more closely resembles an international telephone system than the local networks being installed today.

The specification for the company's data network has evolved since the mid-Sixties, when data processing was based on a single mainframe on each TI site. A European Information centre was subsequently set up at Croydon with a mainframe system co-ordinating communications for the Texas Instruments factories operational in Europe.

Over in the US, the company's corporate information centre at Dallas was the focal point for communications in North America. Communications within TI had improved, but at the expense of taking computing power out of the direct control of the primary user.

By 1970, the heavy demand for transaction processing at a local level prompted the development of TI's Data Exchange Systems, DXS. Based on clusters of Texas minicomputers, DXS had the ability to work in "transparent" mode to carry out enquiries on a mainframe installation whenever required.

The user was given back the ability to control his own machine with his own staff, while retaining the benefits of accessing corporate information.

The first DXS system at Bedford, in 1972, was configured with 30 terminals; the same installation expanding in subsequent phases to four computers handling 256 terminals for local and remote processing.

Point-to-point lines link more than 300 TI minicomputers to the company's own packet switching system called TICOG (TI Communications Grid) – a network of 40 nodes around the world which handle communications with the corporate communications complex in the US.

The capacity of a single TICOG is some 40 kilobaud, so that a total of nine terminals is required to handle the volume of communications traffic passing through TI Bedford.

This UK node is networked in a Delta configuration with similar nodes on TI sites in Nice and Munich, using 50 kilobaud lines. Wideband satellite links are provided from each of these three points to the Dallas centre.

The Dallas installation has six IBM 3033 mainframes, each with 16 Mbytes of memory. A total of 80 tape drives and 470 IBM 3350 disc drives provide storage facilities for the system. A second arm of the communications centre is being developed near Dallas as part of the company's strategy for a three centre node – minimising dependency on any one site.

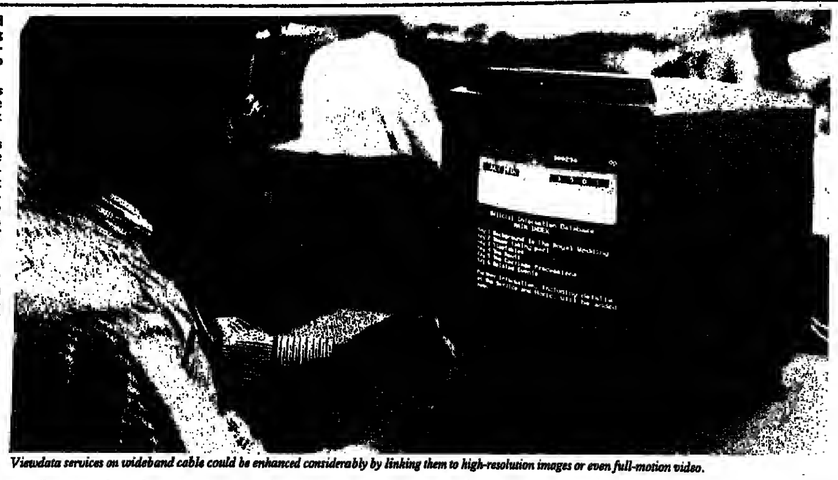
The three node Delta in Europe already avoids the risk of problems arising at any of the key sites on this side of the Atlantic. A high degree of redundancy has been built into each of the nodes, with semi-automatic switchover in the event of power-down.

The TICOGs would re-route communications through one of the alternative paths into Dallas.

The sheer volume of communications, and the minimal response time at a terminal, indicates some success for the TI strategy to date. In a typical day 800,000 separate worldwide transactions are processed through the system, the company says, with a delay of five to six seconds.

While the traffic flows are significant, the application of the network has wider implications for any company of the size of Texas Instruments. A mailing and filing system operating across the whole of the company's network has replaced telex transmissions and has eliminated the majority of paper transactions within departments.

The wideband network planned by the govt will reduce costs and lead to new uses, says Donald Kennett



Viewdata services on wideband cable could be enhanced considerably by linking them to high-resolution images or even full-motion video.

Cable scheme should bring explosion in info services

BY the summer, the UK should have a detailed strategy to bring new television channels and two-way communication services to over half the population.

The project would be tackled as an urgent national task, with the laying of a national cable network to start early next year.

The scheme is far-sighted and is received with scepticism by those who point to the failure of information services on Prestel, but with enthusiasm by cable television operators as well as the many companies which would stand to gain from the massive amount of work involved in installing such a network.

For data transmission, the key difference between the new cable routes and existing and forthcoming telephone lines, including British Telecom's digital network and the competing Mercury network, would lie in the cables' high capacity.

Wideband cable would make possible new ways of manipulating high resolution images and data, and user costs could be far lower than any services that might compete over telephone lines.

The idea of a new network caught the Prime Minister's imagination at a seminar with representatives of 50 UK information technology companies which was held at 10 Downing Street last November.

The concept has since been the subject of two reports, one completed last month by the Prime Minister's eight month old Information Technology Advisory Panel, which is to be published next week. The other, a joint memo from the Home Secretary and the Industry Secretary, has been approved by the Cabinet economic strategy committee chaired by the Prime Minister.

The result is that a team of three senior Cabinet Office civil servants has been asked to report within three months on how the project could be organised and financed.

The Home Secretary has promised a statement on cable-based services to complement the Industry Secretary's recent statement on direct broadcast satellites, as a prelude to a debate in the House on both.

One problem that may need a change in the law is the Home Office's traditional responsibility for monitoring all information carried on broadcast media, when the whole object of the wideband cabling exercise is to foster an explosion in information services of all kinds.

Cable networks would appeal initially as a means of reaching a wider range of television services. But once established, they are likely to attract a variety of new services – partly because data and text can easily be mixed with high-resolution images, partly because several services can be delivered at the same time on the same cable, and partly because the connection is there all the time and does not attract charges like telephone calls.

Information services in general consume relatively little energy and other scarce natural resources. In telecommunications, switching capacity and channel capacity or bandwidth are the scarce resources.

Wideband networks address the latter problem and digital technology goes some way towards addressing the former, so that the tendency for increased utilisation to lead to a proportionate increase in consumption of scarce resources is reduced even further than before.

The key to the growth and the usefulness of wideband services is that they may interact with each other. At the lowest level, two or more services carried on one cable may justify an installation where a lone service would not. But when it comes to using them, the possibilities are far greater.

For example, one company could sell you software to run in your micro that would access several information services at once and process the data from all of them to give the required results.

Or a training program running on a bureau accessed over a medium-speed data channel could take a student interactively through a video presentation delivered over a wideband channel.

The ultimate result could be that the intellectual resources of the entire human population were eventually tapped, with no accompanying disastrous overconsumption of non-renewable resources.

Ideas of wired cities and global wideband networks were first put about in the 1960s. They were taken up by Japan in its long-range theoretical planning as the basis for the second industrial revolution leading to a new generation of information-based industries.

France and Germany both followed, with efforts to stimulate public debate and plans to lay innovative networks to support a variety of data and image transmission services.

The government now feels it may be facing its last chance to get UK industry involved with the emerging world markets for information technology. But unlike Japan, France and Germany which are investing large sums of public money in their schemes, the UK government believes the UK network can be more soundly financed and installed by private industry.

Bringing companies together in consortia to combine different skills and financial muscle is a likely direction. The pattern has been set by the United Satellites consortium of British Telecom, British Aerospace and GEC-Marconi; the Mercury consortium of Cable & Wireless, British Petroleum and Barclays Merchant Bank; and, for exports, the British Telecommunications Systems consortium formed of the arch-rivals Staodard Telephones & Cables, Plessey and GEC.

A recent US study suggested that no two companies could survive in the long term by offering identical products to the same markets. The main protagonists on the UK communicatioos scene – BT, Mercury and the cable companies – are competitors, but they are also quite well differentiated.

BT has installed telephones in 75% of UK households and virtually all businesses. Mercury aims to specialise in providing high-value services to the business community at a time when BT has only just begun to swing around to this approach, having previously provided a standard level of service. But Mercury also aims to attract as many outside providers of value-added services as possible to its network.

Those contemplating buying Buzby Bonds could now be thinking that BT will be faced with ruinous competition from cable services as well as from Mercury. But in fact, it stands to benefit from greatly increased traffic generated by a market that enlarges continuously as more and more interdependent new services are made viable.

BT is already heavily involved in the distribution of television programmes to regional transmitters. Its involvement in United Satellites will bring it revenues for the additional television services, whether they are broadcast directly to rooftop dish antennae or whether they are distributed by cable.

In the case of cable distribution, unless the government changes the rules, it stands to collect licence fees from future cable operators just as it does from the present ones.

It may even be involved in installing or operating new wideband cable services like the experimental one it is installing in Milton Keynes or the ones it installed in new towns in the 1960s.

It will certainly be involved with interconnections between Mercury, the wideband networks and its own networks. One example from Milton Keynes is the link to Prestel that will be available over the multi-channel optical fibre cables, saving users the usual cost of a phone call when they access it.

Home Secretary William Whitelaw has allowed himself to become pretty enthusiastic about the prospects revealed at the November seminar and in the ITAP report – even the Chancellor, Sir Geoffrey Howe is said to be impressed – but some of his less privileged colleagues at the Home Office are extremely sceptical. To them, the market for cable television is declining, having been made redundant by the availability of adequate quality off-air reception to 99% of installed receivers.

Others wonder whether the relatively disappointing penetration of the market by Prestel is an indication of an excess of enthusiasm about other forthcoming information services.

One type of answer is to point to the steady growth in telecommunications traffic of all kinds and the rapid growth in data traffic. Falling costs in computer equipment and digital transmission systems can only accelerate the trend.

The other type of answer involves analysing Prestel and similar products or services, if there are any. Arguably current arrangements for getting onto Prestel are a bit like making customers pay to go into W. H. Smith's. Nobody is putting much effort into selling the equivalent of books and magazines. Even less is anyone enhancing and subsidising his publication with attractive and lucrative advertisements.

With a little product development, cable systems may be better able to achieve this kind of effect, as well as adding some attractive features of their own.

The next generation of cable-borne domestic computer services

Customers in the home	Traffic	Communication carriers	Information service providers	Goods and trade providers
Consumers	Entertainment,	British Telecom	Film dist.	Banks
Information workers	Education	Mercury	Record companies	Mail order houses
Students	Stimulation	Rediffusion	Publishers	Holiday firms
Children	Information	British Relay	Travel agents	Airlines
	Messages	Others	Education establishments	Retailers
	Work output		Libraries	Manufacturers
	Inquiries		DP bureaux	
	Orders			

Save your soul watching the telly

IN the US, where cable television services are mushrooming, there are fears that "teleculte" could soon bedevil the viewer.

According to the American magazine Video Print, it is just a matter of time before viewers will turn on their sets and instead of being seduced into buying expensive goods, some friendly guru will want to save their souls.

The advent of the 50- and 100-channel cable system has opened the broadcasting market to an endless array of program providers, and, according to the article, Madison Avenue execs and Hollywood producers are not the only ones eyeing cable TV in heated anticipation; "religiousnika", too, are busily building their own cable networks into electronic pulpits, waiting to spread the word while making a profit many commercial competitors would sell their souls for.

VideoPrint believes the advent of "narrowcasting", making practical the transmission of programmes to a relatively small and select number of people, presents an extremely economical way to spread the word.

One successful example is the Christian Broadcasting Network's 700 Club, one of the more popular shows on any network around. Although considered an "electronic evangelical" programme, it is set up as any of a dozen variety/talk shows; the show's music and conversation has mass appeal and goes a long way towards hooking people who are channel-hopping around the dial.

Inventor claims to put equal of four of IBM's biggest disc drives into a tiny package . . . Kevin Cahill reports

A 'quiet genius' discovers key to vast data store

KHAN . . . "18 months as a hermit."

THE notice on Bart Khan's door says: Quiet, Genius at Work.

Inside an intense man talks lucidly about a revolutionary storage device, called a charge packet memory.

This is a non-volatile computer data store built in a box measuring 8 inches x 8 inches x 6 ioches. The charge packet memory has a usable store of 9.9 gigabytes of informatioo, which is the equivalent of four of IBM's biggest disc packs, the as yet undelivered 3380. Or put another way, the charge packet memory can bold the equivalent of 20,000 complete novels.

The prototype charge packet memory has been in use for over nine months now, and the first production models are being prepared for shipment to customers.

The price for the device is just over £12,000. The memory can be plugged into any conventional computer and will run under a standard disc operating system, though the impression Khan gives is that this would be an abuse of the CPM's own intelligence as well as a substantial downgrading of the full data transfer rate of 64K per 250 osooseconds which the memory can achieve.

But obviously this overlooks the extraordinary possibilities made available to users by having a virtual memory, which effectively puts 9.9 gigabytes online, in real time.

All Khan set out to do initially was to invent a computer small enough and rugged enough to be used in a ship in rough seas. He saw the challenge in a maritime magazine and immediately set out to produce a computer, not a memory.

The memory was, if not an afterthought, then a design consequence, of the kind of data storage which would be needed to make the computer really useful.

And the first eliminatioo, according to Khan, was any form of conventional disc unit. This left him with either the problem – or opportunity, depending how you look oo it – of finding a non-volatile, non-mecbanical memory of around 64 Mbytes.

Even four or five years ago, however, be was able to produce a design, but cost and the non-availability of suitable devices forced him to abandon the task.

The design be originally came up with would have cost £250,000 – and probably have generated too much heat to be made small enough for the original marine application.

The current CPM, and the computer Khan built – yes, he did that too – is manufactured from standard components.

In the years up to 1980, Khan tried all sorts of memory techniques to get the available componenta to function the way he wanted them to, but without success.

Three years ago the right kind of components, mostly the Motorola 68000 microprocessor, became available, and he went back to his original design.

And charge packet memory was born, he says.

So wbat is it, and more vitally, how does it work? In the document Khan provides, the charge packet memory looks like a single board microprocessor – which is exactly what it is.

It is based on a standard Motorola 68000 microprocessor and fundamentally has only three components which you would not expect to find on any standard one-board processor. These three devices, called respectively a node board, a microcode ROM and a digital parameters latch store, are the "soul" of Khan's amazing inventinn.

What those three devices do is "create" the memory when the machine is in operation. In the words of Khan, "The storage system is basically a dynamic arrangemeot co-ordinated and operated by means of the central processing unit. This is continually updated with information pertaining to the depositions of tbe mapped data and provides for continual recycling and refreshing of such data represented by the charge packet in the storage unit.

In physical terms the 9.9gb of storage does not exist. It is generated from the latch store under the supervision of the microcode in the ROM, using the node board interactively.

In effect Khan's machine codes the data entering the device and lodges that code in the latch store, which is non-volatile. When the CPM is switched on, the contents of the lach store are decoded "into" the operating memory continuously online.

The operational memory, Khan explains, is in an apparent state of constant refresh, aod he is still researching physical aspects of the way the memory performs.

For instance, the 9.9 gigabytes is not the upper limit to which the system can go, but the lowest point at which it will remain stable.

The true secret of the device is obviously locked into the microcode, whicb is burnt into the ROM, and that Khan obviously can't reveal for commercial reasons.

But he does offer some tantalising insights. To understand how the system works he says you have to forget Shannon's theory and binary logic as we know it today. The system works as a result of combining bit position information theory, data redundancy and fuzzy logic.

And there was another hint about the nature of the soul of the device.

Khan is a former military coding expert with a degree io computer science, and a passion for mathematics. Originally he set about designing a data transmissioo system and compression system, based on encryption techniques. The data transfer rate from the memory to a host unit, or between memories, is very fast.

In fact, the coding system means that to transfer the contents of one charge packet memory to another the maximum block of data will be only 8 Kbytes.

This alone could revolutionise the speed and manner in which really large blocks of data can be sent from one point to another, according to Khan.

So far he reckons that the project, which includes the MX99 32-bit micro, has cost a total of £700,000 to develop up to the point of delivering the first systems. This he is now about to do.

The initial revelations about the machine brought over 1,000 enquiries and one Japanese company offered Khan a complete factory and an effective five-year start-up financing.

But he is determined to keep the memory and its attached computer in the UK. This has not proved easy and the only external finance he has had to date is a Barclays start-up loan.

Khan is complimentary about Barclays but obviously suffers from a generally total failure by financial institutions to understand what it is they have to offer.

In Khan's case this appears to be particularly painful. His documentation and his explanations of his device and its relevance are both clear and coherent.

In fact when first asked what the project had cost him personally he replied: "18 months as a hermit".

The Osborne 1 emerged from nowhere last year to challenge micro manufacturers . . . Martin Banks reports

Osborne 1's success confounds the critics

HEALY . . . Aiming at 10% of the UK market in first year.

ADAM Osborne, self-made book publisher turned microcomputer manufacturer, last year launched a machine at a price which established micro manufacturers said would make him bankrupt in no time.

They have been proved hopelessly wrong.

Why has the Osborne 1 been so successful? Why has Adam's first rib started to chalk up a set of telephone-number sales figures, when it looked as though Apple, Tandy and Commodore were well set to repel all newcomers at the top of the personal computer market?

And given that the Osborne is currently notching up significant sales, is it just a silicon bubble waiting to burst, or is there a long-term future for both the company and its products?

In all fairness, these are still early days to start calling the company a real success. After all, it was only formed as an operating company in California in the middle of last year. It would perhaps be easier to suggest that it will be a bubble that will burst in the long term, given the rate at which its sales have taken off.

Yet the market for personal computer systems is still very young, and immature. No-one can say yet with any degree of certainty what type of personal computer will be selling best in three years' time.

That is perhaps why it is still possible for a machine like the Osborne 1 to appear out of the blue to shake the likes of Apple, Tandy and Commodore.

And shake them it would appear to have done. Described by some Apple officials when it appeared as "rubbish", the Osborne 1 is currently selling at a rate of £5 million-worth a month, world-wide.

> **Described as 'rubbish' — sales are £5 million a month**

By the end of 1982, total revenue for the year is expected to be $300 million. If that figure is reached, then the annual sales projection for 1984 of $1,000 million may not seem as wishful as it does now.

Further such sales estimates are a supreme act of faith on the part of the Osborne marketing department — after all, it took Intel a dozen or more years to reach a billion and Apple hasn't got there yet — or the company could justifiably claim to have hit on something.

In the UK, the sales picture seems to follow the "established" trend for the company so far. The UK is the first overseas market to be formally opened by Osborne, with the official formation of a subsidiary company last month in Milton Keynes where it has established a warehouse and burn-in facility to test incoming systems.

Under the direction of Michael Healy — who came into the personal computer business out of the time sharing bureau world via Intelligence UK, the company which developed the successful Micromodeller financial modelling package for the Apple II — Osborne UK has been set some high targets for a start-up operation.

We are aiming at around 10% of the UK market this year," Healy said, "which will be some 10,000 units. By December we should be selling it the rate of 1,500 a month."

Such a performance, if it is achieved, should put Osborne into the top three or four places in the UK personal computer league, which would be quite an achievement for a company that started trading only last month.

According to Healy, February's sales totalled 350 units. At face value this is an impressive start, except of course that it is largely made up, as Healy readily admits, of a high percentage of pre-ordered sales placed before the first shipment of systems.

He expects, however, to see the budgeted sales target for March of some 250 units beaten by at least 25%.

Not unnaturally, Healy feels that current growth rates are sustainable and that future sales targets are achievable. The company is thinking big.

There are already ambitious plans for an operation in Ireland which will become the central shipping point for the whole of Europe. Agents in France and Italy are being appointed and a German subsidiary company is being established to deal with the expected flow of customers.

> **Manufacturers have been late in appreciating the business market's importance.**

But will the customers come, and if so, from where?

Michael Healy has definite views on this subject — views based on his own observations of how the personal computer market has developed. "The big market," he said, "is the business user, and the next wave of productivity improvements are not going to come on the shop floor or with the secretary.

"They will come with the senior and middle management of companies and businesses. These are the really high-cost staff in a company, and making effective use of their time will become very important."

He is happy to acknowledge that every other manufacturer of personal computers has also become aware of this particular aspect of the market, but doubts whether they have all got their approach correct — if only for reasons of historical precedent.

Many of them have appreciated the importance of the business market a trifle late, Healy feels, and have taken the wrong route by trying to go up-market with bigger and grander systems. Here, he believes, they will only meet the big companies — IBM not excluded — on the way down from their mainframe and minicomputer positions.

There is certainly a role for the desktop system, Healy thinks, but without being specific he implies that there may not be many different manufacturers in the future, or many different individual suppliers.

"Take Apple, for example," he said. "There is a large number of dealers for all Apple products but not that many for the Apple III business system." At a recent count, there were 560 dealers in the UK for the Apple II which represents, as one dealer put it, "one for every hundred thousand head of population." Less than one-fifth are approved to handle the Apple III.

Though he confidently predicts that Osborne's sales will rival Apple's, Healy regards a national network of 60 outlets as sufficient. To date there are 31 outlets currently owned by 14 companies.

The use of larger "multiples" like the Xerox stores, Laskys and the Byte Shop was a conscious choice by Healy, because he sees the system as ideal for a salesman on the road. This is the type of staff which only the bigger dealers can afford.

Some of the large dealer companies have recently started to think in terms of sales forces on the road, though it still goes against the general trend of the personal computer business. Systems like the Osborne, Healy feels, make such a move possible.

"It is an ideal machine for the salesman," he said, "because it is a complete package."

Much has already been made of the way Osborne has packaged a fairly standard microcomputer system of CPU, memory, keyboard, display, and dual disc drives together with the type of software that is most commonly used on such equipment. Not only is there the standard CP/M operating system — the Osborne comes with such packages as word processing and financial modelling thrown in for the price, which is itself very competitive.

This, Healy contends, is the major difference between his company's approach and that of other manufacturers. Most of the others, he feels, have looked to the development of the business market as something to move up into with grander products. They started life with computers configured for what they thought might be a hobbyist marketplace.

Osborne's ideas go the other way. In terms of configuration, the Osborne 1 is strictly conventional, even boring to these days of technological pazzazz. "What Adam Osborne has done is simply to see the need for a low-cost complete package, which obviously includes software," Healy said.

The type of customers this package is attracting are the ones he is aiming for: senior and middle management in large companies, and the professionals in a wide range of occupations.

An important factor in the machine's favour is that it is portable and looks like being the first computer to really make a success of that facility.

There have been several attempts in the past to produce and sell a portable microcomputer system, but none has proved to be a success. There have been three main reasons for this, which Healy contends Osborne has overcome.

The first is packaging. "With some of them, the objective seems to have been to make it look like something else," he said. "The computer-in-a-briefcase for example. There they have tried to squeeze the system into a pre-defined and inconvenient shape."

> **The Osborne 1 fits in the market place below many of the desk top systems . . . but it can be taken anywhere**

Certainly this cannot be said of the Osborne, which is a rather ugly, if functional, duckling.

"The second factor has been price," Healy continued. "Most of them have been very expensive for what they have been."

The third factor he listed was the incorporation of software.

Osborne has therefore created a new marketplace, Healy claims a market based on providing a fairly simple, low-cost, and usable tool to professionals and managers.

"There is no necessity to expand the Osborne," he said, "because of CP/M. For example, it is easy for users to build small clusters of systems using CP/M and the BSTAM communications software.

"The Osborne 1 fits in the market below many of the desktop systems in power and capabilities, but it can be taken anywhere."

Kevin Cahill describes a revolutionary new medical package which accurately pinpoints the cause of stomach pains

Two pioneer micro programs beat doctors at diagnosis

THE nuclear monsters in America's Polaris flect often disappear into the ocean depths for months at a time. The submarines do not normally carry doctors, and the paramedics on board now use a unique piece of UK-written software to help diagnose the cause of stomach and chest pains among the crew.

The software, two small Basic programs which will run on any CP/M-based micro, are possibly the only installed and working computer-aided diagnostic programs in the world, other than those directly associated with the team who wrote them.

They were written for the US Navy by a team of four people, led by Tim de Dombal from the Leeds University Department of Clinical Medicine.

There are now over 800 papers published on the topic of computer-aided diagnosis, though how many describe working systems is not clear, and perhaps 100 or more of these papers have come from Leeds, or groups around the world who work with the Leeds team.

Most of the rest come from American sources, although less than 10 years ago the entire published medical literature on computer-aided diagnosis consisted of three papers written by de Dombal and his team.

Of course, there are working diagnostic programs at Leeds, and soon there will be many more. The Department of Health and Social Security has just provided the team with £100,000 to begin field trials in ten hospitals in the Leeds area.

Back in 1970-71, de Dombal and his team devised a simple sheet of questions to be put to all patients coming into the Leeds General Hospital with an acute pain in the stomach.

With the help of other doctors, they then created a small database, 552 patient records, which related the symptoms and the eventual outcome together.

Then de Dombal persuaded doctors in both Leeds General Infirmary and St James' Hospital in the same city to participate in a series of trials, using the new computer-based system as both an aid, and a "competitor". The results were startling.

He tells a superb story about the very first attempt at running a "live" diagnosis on the Leeds University PDP-8/KD79 system.

The diagnostic program was up and apparently running, and running and running. For 4¼ hours to be exact, according to de Dombal, nothing had come back in response to the first set of symptoms and outside, night and a summer storm had gathered.

Suddenly, in the wake of a massive lightning flash and thunderclap, the ICL screen flickered into life, and the system finally yielded the first estimates of the patient's disease.

The application of the system in the field trials proved almost as startling as the setting in which that first diagnosis emerged.

The overall diagnostic accuracy of the computer-aided system, based on 552 patients, was 91.5%.

During the course of the trial the diagnostic success rate of the senior hospital doctors (the registrars and clinicians) had risen by almost 5%, from 77% to 82%, and by even more in relation to two of the major outcomes of in-hospital diagnosis.

Generally, de Dombal explains, there are three major decisions which can follow a diagnosis: a patient can be sent home, detained in hospital for observation, or detained and operated on.

In the course of the trial the proportion of appendices which perforated before operation fell from 36% to just 4%.

Incidence of patients sent for operation who subsequently proved to have no appendix problem also fell sharply, from 25% to 6%-7%.

A crucial aspect of the trial was the fact that had the computer-based diagnosis been followed, no patient would have perforated or abscessed prior to operation, and the proportion of negative operations would have fallen to zero.

The computer programs, written in Fortran, now had a real database to run on, and de Dombal was able to move the entire diagnostic program onto a small desk-top Wang 2000, which de Dombal is still using.

In the course of this and subsequent trials, de Dombal made a series of important discoveries.

When evaluating symptoms presented against confirmed disease outcomes, de Dombal discovered that as the volume of symptoms multiplied, even those typical of the disease suffered, a doctor's ability to reach a good diagnosis declined rapidly.

When the computer was running its Bayesian statistical probability equations, a pattern emerged which showed that approximately three correct symptoms, even if all subsequent symptoms were absent or incorrect, enabled the computer to maintain its level of accuracy.

This particular discovery has potentially vital consequences for all decision makers. Put simply, the pursuit of more and more facts in order to reach a conclusion or decision may amount to a near guarantee that the final conclusion will be wrong.

(Perhaps the saddest failure to apply the law of limited data occurred right on the diagnostic team's doorstep, when the mass of data accumulated by the police failed to identify the Yorkshire Ripper).

In that early trial the occasions on which the computer system mis-diagnosed were frequently found to have been caused by items such as rare conditions, which had not occurred in the samples in the database.

But the figure of most concern to de Dombal was the lowest one in the trial. Patients diagnosed on admission to a general hospital in the City of London were found to be correctly diagnosed less than 45% of the time.

That is poor by any standards, but had even more vital implications for non-metropolitan area hospitals, and for hospitals in the Third World. Much of the ten years since that trial in 1971-1972 have been used by de Dombal to extend the accuracy of the basic systems, by including rare conditions and by setting up studies all over the world to ensure that variations in the presentation of disease symptoms in different countries were accurately represented in the computer system.

Currently, doctors in 26 countries, including two centres in China, one in Japan and others as far apart as Mexico and Pakistan, are testing de Dombal's system, and submitting results to Leeds. This has led to a vast increase in the database source rate, and a subsequent increase in the accuracy and versatility of the diagnostic system.

In Mexico a group of doctors in several hospitals are making immediate and direct use of the system to assist with diagnosis in poor city and rural areas.

This lead is shortly expected to be followed by the participant groups in the various countries. De Dombal says that this amounts to giving the poorest doctors, in the poorest hospitals, in the poorest parts of the world, direct access to the expertise of hundreds of their colleagues for the price of a microcomputer system.

Rat poison and the Russian athlete

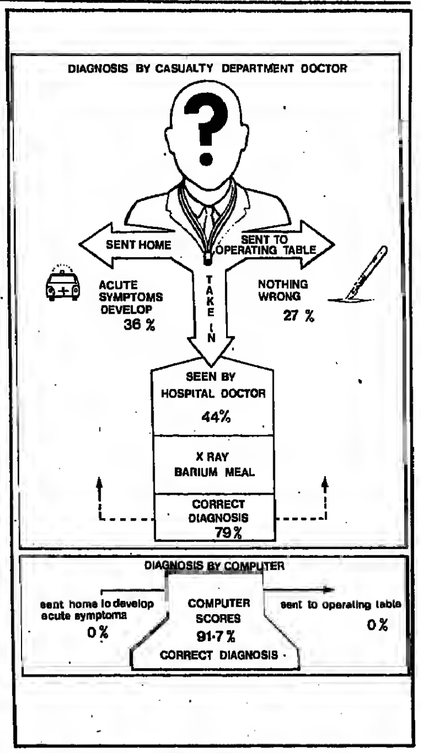
IN parallel with his work on the diagnostic system as tool for doctors, de Dombal has also devised a series of self-training programmes based on a microcomputer, for use by student doctors.

One of these programmes presents the student with the simulated case of an athlete of Russian origin who has developed blood clotting. The programme has three levels of difficulty relating to the various problems of administering Warfarin, which is both a well-known rat poison and the most effective treatment for blood clotting.

As the doctor operates the self-tutoring system, he or she is successively presented with realistic factors such as intake of alcohol, or wrongly described pain killers which can either amplify or inhibit the effects of Warfarin.

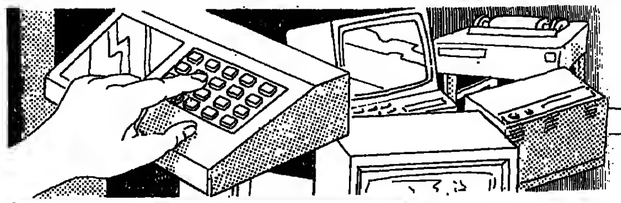
Because the effects of Warfarin take 48 hours to develop, the micro is the ideal tool to dynamically present the changes in the patient, one of which begins with the word Sorry . . . (the rest you can guess).

It is doubtful whether any form of tutor/student dialogue could effectively give a student such an exact and constantly accurate dynamic presentation of cause and effect, since person-to-person evaluation would limit the accuracy of the effect and would not have the immediacy which makes the programme so interesting.



De Dombal's computer diagnosis of abdominal pains scores well against the casualty department doctor.

. . . diagnosis by hospital doctors is still remarkably inaccurate.



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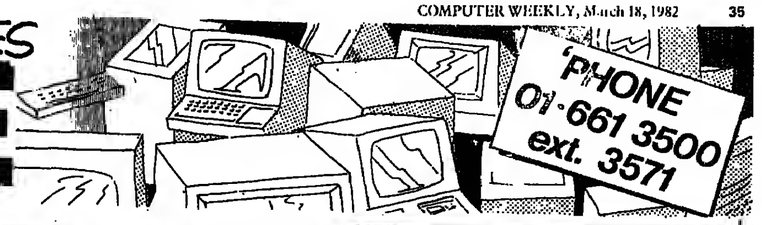

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Ref. CW10/6

FRANCE IBM SYSTEM PROGRAMMERS

One of France's largest Computer Services Companies have openings for IBM Systems Programmers to work on a variety of our client's installations in a Systems engineering role.

Knowledge of French would be helpful, though a willingness to learn French is essential. Technical experience must include a minimum of 2 years' MVS experience plus related Software Tools. Ref. CW10/7

OPERATIONS RESEARCH PROGRAMMER/ANALYST

Our client's London-based operational Research/Scientific Systems group is currently seeking programmers with the following expertise:

- FORTRAN
- MVS/TSO
- Min. 2 yrs' exp.
- IBM
- Honours Degree
- Financial Planning

Ref. CW10/10

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An experienced Systems Engineer is sought by our client to develop Data Switching/Package Systems switching from design to implementation.

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The successful candidates must be self-motivated able to work on his or her own and adapt to modern QA Techniques.

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Ref. CW/11

All the above appointments involve permanent positions and carry a wide range of salary and conditions dependent on location and experience. In the first instance please send us a copy of your CV (alternatively telephone for an application form) so we may discuss your application in confidence with our client on your behalf.

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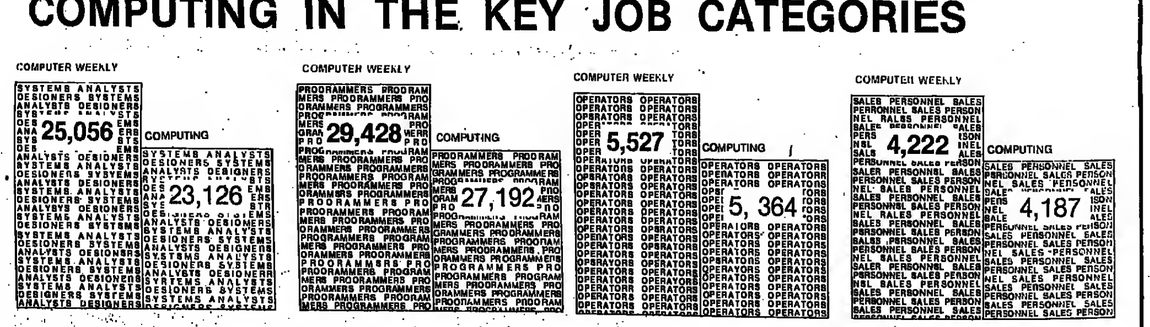

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THE UNIVERSITY OF SHEFFIELD DEPARTMENT OF ELECTRONIC & ELECTRICAL ENGINEERING

PROGRAMMER — CODUS DATABANK

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M. GEN 1

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R & M GEN 2

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REF: S/GEN 1

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CW 11/8 MICHAEL

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CW 11/1 DAWN

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As a result of our success we now wish to expand our Sales force with Sales Executives capable of increasing our effectiveness and penetration within our traditional market sector.

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Building upon a successful track record in our traditional market place, we are now poised to address the commercial market competitively with a new range of super mini computers. Offering the PICK operating system, one of the most powerful, relational database management systems available on any computer, the systems include fully integrated packages for both financial and manufacturing applications.
This represents a rare opportunity for commercial Sales Executives and Technical Sales Support wishing to make their mark within a small, newly created team.

For further information and an immediate confidential, local interview, telephone Peter Dudgeon on 01-935 0671 (24 hour answering service) or 01-674 8627 (evenings and weekends).

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Our clients offer an excellent employment package, and the period offices are located in a central position in one of the best town centres near London. Car parking facilities are provided; and the two rail stations are nearby.

To hear more about this opportunity, please telephone us quoting reference 755, write briefly, or leave a message on our answering machine after hours and we will call you back.

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Central London Up to £10,000

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- real potential for creative people to make a positive contribution
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This opening will interest programmers with upwards of two years' software experience in a development or support environment using a major operating system. Preference will be given to candidates familiar with VME/B (ideally with exposure to TP or IDMS) but software programmers with experience on other mainframes will be considered, as retraining will be provided.
You would play an important part in providing technical support in a major ICI 2900 installation and you would find ample scope for applying your expertise as a member of our clients' software group, typically dealing with operating system enhancement, performance measurement, development of in-house software, problem solving and technical advice in users.

We are recruiting on behalf of clients. Please ring us for an informal, confidential talk, quoting ref. 204, or leave a message on our answering machine after hours.

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Plessey Chair and Head of Department of Computing

£15,145–£16,590

Candidates with appropriate qualifications and industrial or professional experience are invited to apply for the first appointment to this Chair.

The successful applicant will play an important role in continuing existing activities but it is in the sphere of future development that the institution is seeking academic leadership of a high order. The framework for development already exists in general terms and a number of new courses have been proposed. It is envisaged that the person appointed will be a recognised authority in the computing area and will be able to foster and encourage, by personal example, the growth of research and consultancy.

Further details and form of application available from the Staff Officer, Trent Polytechnic, Burton Street, Nottingham NG1 4BU.

Completed applications to be returned by 5th April 1982.

TRENT POLYTECHNIC NOTTINGHAM (8910)

PROGRAMMER

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We are a firm of consulting civil engineers and transportation planners based in Basingstoke, Hampshire with a heavy workload for both UK and overseas clients. We have a staff of 7 programmers and are looking for a further programmer with at least one year's experience in Fortran since leaving university or HNC. Although based in Basingstoke, the successful candidate will be expected to be available to travel and work in the Middle East or Hong Kong when required.

For application form please write to or telephone Mrs Ann Hill, Scott Wilson Kirkpatrick & Partners, Scott House, Basing View, Basingstoke, Hants RG21 2JG. Tel: Basingstoke (0256) 61181.

(8884)

Practical Computing

is looking for a programmer/journalist. Programming and writing skills are equally important but prior experience of journalism is not necessarily required.

The successful applicant will have:

* Two years' experience of computing
* Knowledge of at least two computer languages
* The ability to write clear English

Send a CV and examples of your written work to The Editor,

Practical Computing

Quadrant House, Sutton SM2 5AS.

The post will carry a salary of £6,463 (subject to annual review in April).

(8821)

South East Thames Regional Health Authority

CAMBERWELL COMPUTER CENTRE

SENIOR COMPUTER OPERATOR

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Proficiency payments of up to £760 per annum are also payable, subject to the applicant being able to meet the requirements

The Regional Health Authority currently operates a large configuration comprising two ICL 2804s located at King's College Hospital. These machines are used to support a wide variety of applications which are continuously undergoing enhancements. The Authority now requires an experienced Computer Operator with not less than two years' experience of ICL 2904 equipment. The main requirement is for a person of mature approach and although a knowledge of Data Communications, in particular RJE and enquiry program operating, is important for greater consideration will be given to applicants able to demonstrate qualities of leadership and self-reliance. This position involves shift working and the successful applicant will have considerable opportunities for further promotion. Those interested should apply in the first instance to:

The Computer Installation Manager, King's College Hospital Computer Installation, Denmark Hill, London SE5 9RS. Telephone No: 01-274 6222 Ext. 2576. Closing date for applicants is two weeks from the date of this advertisement. 8903

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Candidates must have two years experience of writing on line and batch programs in COBOL and a good knowledge of I.C.L. software.

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Job description and application form available from:

The Computer Manager, Borough Management Services and Personnel Department, Town Hall, Chapel Road, Worthing, West Sussex, BN11 1LE. Tel. (0903) 39941 ext. 242. Closing date: 22nd March, 1982. (8910)

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£9624-£12141

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In their respective areas, these are senior posts and the Polytechnic seeks commensurate qualifications, experience and experience.

Further details and an application form may be obtained from the Deputy Head of Personnel, Brighton Polytechnic, Mauisecamb, Brighton BN2 4AT. Tel. Brighton 693655, Ext. 2637. Closing date 6 April, 1982. (8885)

UNIVERSITY COLLEGE LONDON

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Candidates should have a sound technical background in electronics or telecommunications with preferably an ONC/HNC or equivalent qualification. Salary will be paid on the Technician Grades 4 or 5 scales, £5284 to £5979 or £5655 to £6850, according to experience and qualifications, plus £1087 London Weighting.

Applications including details of previous employment and education, plus the names of two referees, should be sent to the Computer Manager, University College London, Gower Street, London WC1E 6BT or telephone 388 6721 for further details. (8886)

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Opportunities for further study and research.

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Vice-Principal, Slough College of Higher Education, Wellington Street, SLOUGH SL1 1YG. (8869)

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Applications are invited for a Programmer to join an existing program development group. Experience in FORTRAN is required. Experience in business applications and interactive systems would be advantageous.

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DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

LECTURER II/SENIOR LECTURER IN COMPUTING

Salary: £6,462 to £12,141 per annum inclusive

Applicants should be capable of lecturing to honours degree level in their specialism, and have had industrial and/or research experience. Ability to supervise research and/or an interest in computer graphics would be an advantage.

Application forms and further particulars may be obtained from:

The Polytechnic of Wales — The Personnel Officer, The Polytechnic of Wales, PONTYPRIDD, Mid Glamorgan CF37 1DL. Telephone (0443) 405133 ext 2021

CLOSING DATE: 2 April 1982 (8918)

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ComputerWeekly

SPECIAL FEATURE

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March 25 issue

If you are looking for professional Sales and Marketing people, then Computer Weekly is the journal you need, because Computer Weekly reaches more sales people than any other weekly computer journal.

The March 25 issue provides an added bonus with our special editorially supported feature, highlighting the career opportunities for sales professionals. This is just one of many career-linked features to be published during 1982 aimed at helping readers improve their careers, and at the same time provide invaluable back-up for advertisers.

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To reserve space for the Sales & Marketing feature phone (01) 661 0121 today.

Copy deadline is Monday, March 22.

ComputerWeekly

Classified Department, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

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At present, we have a Burroughs B3800 medium system facility and are currently installing an auxiliary B2900 but we are also contemplating a move to Burroughs large systems. Consequently, we are looking for additional DP skills and, in our selection of suitable candidates for the following positions, will give preference to people familiar with the equipment, techniques and language we employ:

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With direct responsibility for two systems analysts and two analyst programmers and for ensuring the successful implementation of systems, you will be expected to conduct feasibility studies and, whenever necessary, assist the personnel reporting to you. Established managerial ability and a flair for written and verbal communication are essential together with at least six years' DP experience and a sound knowledge of project management, systems analysis and design, and COBOL programming.

Systems Analyst

Without being responsible for any personnel, you will deputise for the Project Manager whenever necessary. Your main tasks will be to investigate user requirements, analyse problems and design appropriate systems for which you will produce proposals and programme specifications: the actual programming and implementation will, however, be an Analyst Programmer's responsibilities. It will also be part of your function to prepare all the documentation and user guides necessary to complete a project and then educate the user. A minimum of four years' DP experience, in-depth knowledge of systems analysis and design, and experience on at least one major system using data base are all essential. Experience on Burroughs equipment would be particularly useful.

Operations Manager

You will be responsible for computer operations, data control and data capture, using PERTEC key-to-disk equipment. To be considered, you should have had at least five years' DP experience and already established yourself in operations management.

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Your responsibilities will be to control software, implement and maintain standards and undertake not only DP training but also hardware and software feasibility studies. A minimum of six years' DP experience and exposure to Burroughs systems are prerequisite.

We are looking for ambitious, industrious people of stable character, keen to get ahead fast, and preferably married. Each of the above positions carries an attractive starting salary, negotiable on the basis of qualifications, experience and responsibilities. The comprehensive fringe benefits include an annual bonus, pension, medical aid, assistance and loss-car facilities. We shall also provide generous relocation assistance and temporary accommodation for one month after your arrival in Durban.

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(£5500-£10700)

for

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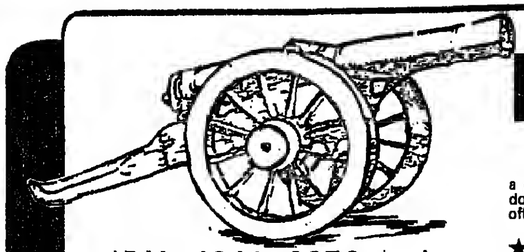
For further details and application form contact Lynda Tuley, Royal Society of Chemistry, University Park, Nottingham NG7 2RD. Tel. Nottingham 57411 Ext 30. (8908)



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(6924)

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c£8.5k-£11k **South Bucks**

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SPECIAL FEATURE

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March 25 issue

If you are looking for professional Sales and Marketing people, then Computer Weekly is the journal you need, because Computer Weekly reaches more sales people than any other weekly computer journal.

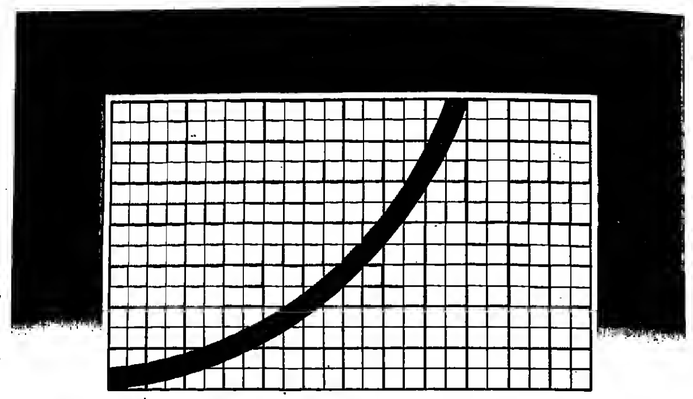
The March 25 issue provides an added bonus with our special editorially supported feature, highlighting the career opportunities for sales professionals. This is just one of many career-linked features to be published during 1982 aimed at helping readers improve their careers, and at the same time provide invaluable back-up for advertisers.

Whoever you are looking for Computer Weekly is your best communication link with skilled computer people. Analysts/Designers, Programmers, Operators, Sales Executives — we reach more than our nearest competitor. And it's best for those top jobs too with over 32% of readers holding senior/managerial positions.

To reserve space for the Sales & Marketing feature phone (01) 661 0121 today.

Copy deadline is Monday, March 22.

ComputerWeekly



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Applications are forwarded to the client concerned, therefore companies in which you are not interested should be listed in a covering letter to the Confidential Reply Service Supervisor.

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SALES BIT

The quality of management is not strained – Part 1

Arriving at a natural level of incompetence

IT IS unlikely that any industry has advanced its technology so rapidly, or grown so big so quickly as the computer business. Thirty years ago it did not exist at all, yet today it continues to expand at a breathtaking pace, despite all opposing economic forces, and has an inescapable grip upon all other major industries whose operational heartbeat has become virtually dependent on the power of the computer.

Of course, this kind of success story is not without its shortcomings, and none more profound than the quality of management such an unusual situation has produced. The industry has become like some gawky youth (well, that's what we call them in Yorkshire!) who finds himself over six feet tall at a very early age with the body of a man and the experience of a child.

Much has been said about the nature of management throughout the business world, its worrying inadequacies and comic manifestations. What makes the computer industry a more extreme case is the myriad of management opportunities that have been created within its startling trajectory.

Most other industries appear to have sustained the "dead men's shoes" environment of the established management structure since the Industrial Revolution. Many computer companies which were no more than three men and a dog in the Sixties, are now large international organisations, many still run by a large proportion of the same management.

It is reasonable to say that within such ranks, the opportunity for individuals to make the transition from small business manager to senior executive in a large international corporation was, and is, not equal, yet many of those whose ego drive is greater than their competence have managed to complete the journey.

It is interesting to examine some of the things that have been said about the nature of management in general and consider how applicable it is to the past and present generals and lieutenants of the computer industry. (Yes, I am one of them!)

The Peter Principle is a well known and apposite, if not jaundiced, observation that within the management hierarchy each individual progresses to his natural level of incompetence. My own observation is that this phenomenon usually moves the manager inexorably towards a position that is one stage beyond the job for which he is ideally suited.

He needs to fail before he realises his personal limitations. Unfortunately, neither the individual nor his peers ever seems to have the guts to make the one common sense step back to efficiency and real job satisfaction.

There are some rather obvious corollaries to the Peter Principle that many readers may have already experienced or indeed may be enjoying at the moment. The unavoidable conclusion of this axiom is that ultimately every management position becomes occupied by someone who is incompetent to carry out his duties. The longer established the company and the larger its size, the more likely this is to be the case.

Those who reach their natural level of incompetence stick and those who don't eventually get out and seek some other company like a myopic lemming euphorically seeking the edge of his cliff of competence.

But what about other people who find themselves dwelling within this environment? The inescapable truth is that all the real work in any company is accomplished by those people who are yet to achieve their natural level of incompetence.

These are the ones who will continue to achieve until that dreadful day when the conflict between ambition and capability brings about an inevitable conclusion where everybody loses.

More next week.

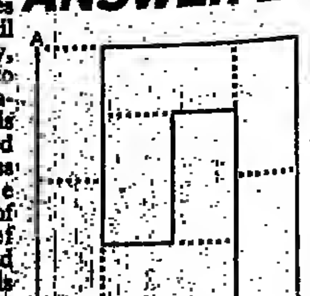
Alan Williams

COURSES

■ THE National Computing Centre's Viewdata Systems seminar will be held on April 1-2. It is a briefing for managers, many of whom, the NCC thinks, consider viewdata irrelevant to their needs. The course aims to show that time and money can be saved in shifting information around an organisation using viewdata, and how the facility can be extended. Fee is £220 for NCC members and £244.45 plus VAT for non-members. Details (061) 228 6333.

■ THE future of most businesses will be affected by the international economy, the development of underdeveloped countries and the availability of energy and raw materials. So says Brunel Institute of Organisation and Social Studies, whose Alternative Futures seminar takes place on April 27-28 at Brunel University, Middx. The seminar aims to build up a range of alternative futures based on what is known and can be predicted today, to test the robustness of strategic plans. The seminar is thought to be of special interest to chief executives, directors and senior managers. Fee is £210. Details Uxbridge 36461.

PUZZLE ANSWER



ComputerWeekly

Thursday, March 18, 1982

US computer stocks hit by the recession

by Kevin Cahill

THE American computer industry is reeling under the impact of the recession, which is eroding earnings and killing growth in a way the industry has not experienced before.

Low confidence in the industry was reflected in o tidal wave of selling on the New York stock exchange last week as investors reacted to gloomy reports from o number of leading analysts.

The rout was led by a fall of over $5 in the value of IBM stock, last week, which wiped just under $3 billion from the stock market valuation.

The general view of US analysts is that the computer industry is no longer recession-proof, and that the shares are responding to the general American economie gloom.

Tom Crotty, an analyst with the Gartoer group and a well-known American IBM watcber, said he doubted that IBM would fall as low as $35, as some analysts are predicting, unless Wall Street itself sank below 700 on the Dow Jones (a similar reference to the Financial Times Index in London).

Crotty noted that IBM had had o weaker first quarter. "One would have thought," he said, "that people already realised that a recessioo was on."

Peter Labbe, an analyst with brokers Smitb Barney and Upham, said that things would get worse before they got better. He thought that the current share prices alide would bottom out in the second quarter.

However, fears over the IBM stock are thought to hove deepened over the news that IBM was borrowing $125 million this early in the year, and the fact that the compaoy has just pushed through a third round of price increases inside a year.

The price increases affected almost all IBM's product range except the new top-end machine, the 3081.

Tbe company is heavily dependent on this key product for its growth and profits.

Ulrich Weil, a leading commentator and analyst at New York bank Morgan Stanley, said that this is a period of significant recession. "As capital budgets are being reduced, the computer industry is being hit more than in the past, when computers were a relatively minor factor in the equation."

Both Datapoint and Data General have come in for increasing criticism from the analysts, with the stocks showing falls of $20 each recently.

WEIL . . . Capital budget cuts are hurting the industry now.

IBM users drawn to System 38 upgrade

by David Craver

MORE incentive for IBM 360 and 370 users to convert their software to the new architecture of the System 38 is expected next week. Worldwide release of 4 Mbyte IBM 38/Model 7 will be announced with twice the performance of the Model 5.

It establishes a growth path for the System 38 "database machine" which may prove hard to resist. Existing software investment in 360/50 or 370/135 systems means that the easiest upgrade move would be to the 4300.

But the 4300 series still requires programmers and systems analysts, contrary to IBM's intentioos at the time of its lauoch, and the System 38 has proved to be demonstrably more productive.

The new Model 7 will equate roughly to the 4341 Model Group 2 or a 3031. It will support 80 or 90 workstations on a mixture of applications, compared to 50 or so on the Model 5.

Mike Newman, managing directos of System 38 specialist, Interactive Database Systems, says the new machine will give users "more aud more reason to go oo to a 38".

But the 360 and 370 user who is not too heavily ioto CICS and DLI will have to "bite the bullet" and accept that everything needs to be recoded.

Honeywell shares drop on news of revenues

by Boris Sedacca

WORLDWIDE revenues at Honeywell for the first three months of this year are expected to be below last year's, the company has warned. Meanwhile, the company is to improve the look of its accounts by taking out the losses which stem from its stake in French manofaeturer CII-Honeywell Bull.

The announcemeot that falling compufer revenues are likely to have a significaent effeot on Honeywell's first quarter profits caused the shares to drop $5 to $65.

The trend of falling computer revenues was first signalled when Honeywell announced a profits drop in its computer business from $184 million in 1980 to $158 million last year.

Honeywell blamed the fall mainly on CII-Honeywell Bull at the time, but it is now becoming clear that the parent is also performing poorly. The company has discontinued the equity accounting method of including CII-Honeywell Bell in its financial figures as from the beginning of 1982.

A spokesman for Honeywell said that the UK business is running strongly and that longer-term prospects also look promising.

Jacquard folds in UK as parent fails to sell

by David Craver

WORD processing company A. M. Jacquard shut down its UK operations last week following delays by the loss-making US parent AM International in completing the sale of'd livision.

Some 25 jeople have been made redundant at the firm's Ruislip offices, and future sales of Jacquard systems in the UK will be handled by distributors.

Sales of Jacquard products had already ground to a halt after AM International of Chicago announced last November that the small business and word processing division would be sold. An agreement in principle had been reached with Applied Technology Ventures, a Californian investment company, but last-minute snags in the deal sparked the decision to close the UK offices.

It is understood that the original owners of Jacquard Systems, before it was bought by AM International three years ago, may now make a bid to buy back their old company.

Berrie Durrent, chairman of the UK Jacquard users group and senior systems project manager at engineering firm Matthew Hall, said the situation is "very confusing". He had not been formally notified by Jacquard about the latest developments, and added that his main concern is that Jacquard users are able to get continued support from UK distributors.

How distributors will pick up the flow of spare parts is not settled, although in the main they have had direct contact with the US rather than the UK company.

A bigger question mark bangs over the other European distributors, who dealt directly with Jacquard in the UK, the European headquarters. The direct sales office in France is also expected to close.

Jacquard has over 1,000 systems in Europe, and an estimated 500 systems in the UK.

BT price cut aids computer users

COMPUTER users reaped the first benefits of the demonopolisation of the telecommunications system in the UK when British Telecom cut its long-distance tariffs by up to 35 per cent earlier this week.

The change is effective from May 1 and will particularly benefit computer users with heavy daytime data transmission loads.

Manufacturers group set up

A POLITICAL pressure group to represent the interests of UK computer manufacturers has been formed.

The United Kingdom Information Technology Organisation and the British membership of UKITO's European counterpart, the European Independent Informatics Industry Trade Association have merged.

The terms of reference and constitution of the new organisation were finalised early this week. UKITO will remain as a pressure group for British owned and controlled computer manufacturers or "value-added" service organisations, a term designed to include ICL in the club, while all UK members of EIII will come together under UKITO.

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